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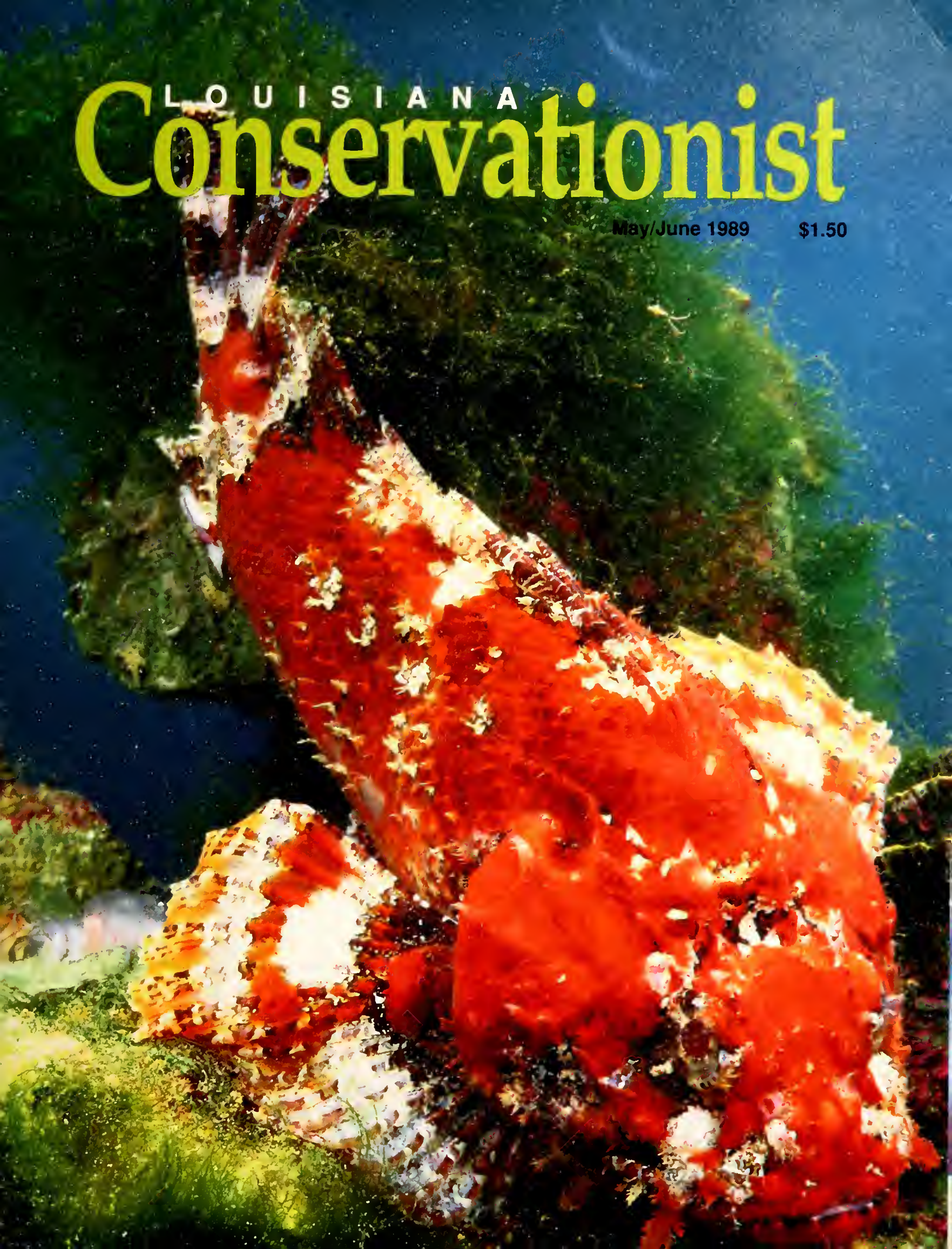

Virginia Van Sickle

We at Wildlife and Fisheries are excited about this issue of Louisiana Conservationist. We feel it's one of the best—and most useful—we've ever brought to you.

We're excited, too, about the new system of licensing we've developed for our sportsmen. It is sure to save on time and frazzled nerves for both those who use recreational licenses and those who sell them, and to yield considerable cash savings for the department.

The key element is a wallet-sized license carrier that can accommodate all nine available licenses, including two brand-new ones: Louisiana's beautiful new Duck Stamp and the new muzzleloader license (for black-powder enthusiasts who'll have their own special deer season in the fall).

The carrier also features a lost-license replacement stub that will expedite getting duplicate licenses if yours are lost are stolen.

You'll find full details of the new license carrier on page 38.

Anyone who's ever brushed up against a Portuguese man-of-war or stepped on a spiny hardhead catfish at the beach will appreciate the timeliness of our article on venomous marine animals. It's accompanied by some very rare photos of those creatures.

There's a piece on the red-cockaded woodpecker and the importance of wildlife management to its survival, and for a change of pace, a firsthand account of fishing for "lemons" in the Gulf will take your breath away.

And speaking of excitement, there's plenty of that in the air for our readers who live out Eunice way. Traces of the original Cajun prairie have been discovered nearby, and citizens are organizing to protect and take pleasure from it.

Two LSU professors, Charles Allen and Malcolm Vidrine, have literally covered every foot of Louisiana's remnant prairie and have provided us with gorgeous color photos of its wildflowers. We've designed the magazine center section so that it can be removed and used as a poster. Adults and children alike will love it.

There's lots more in this issue, too. So read on—and enjoy!

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LOUISIANA Conservationist

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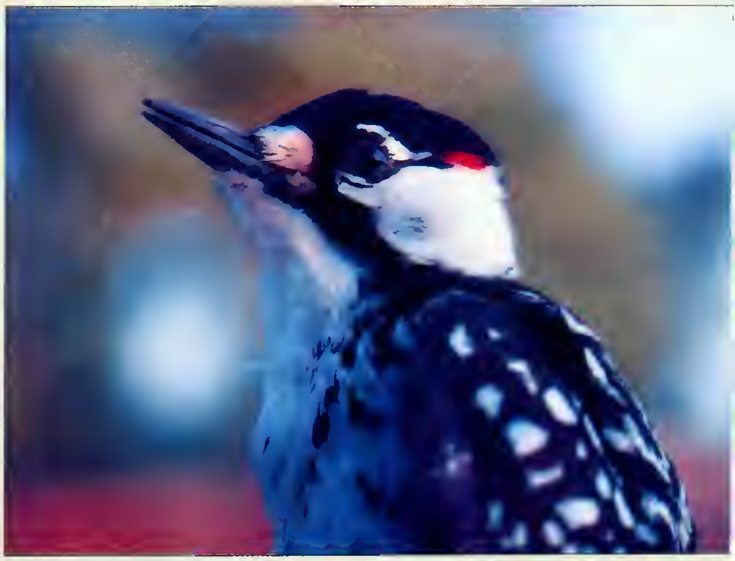


Blue tangs (blue) and ocean surgeons (tan)

Photograph by Richard Bejarano

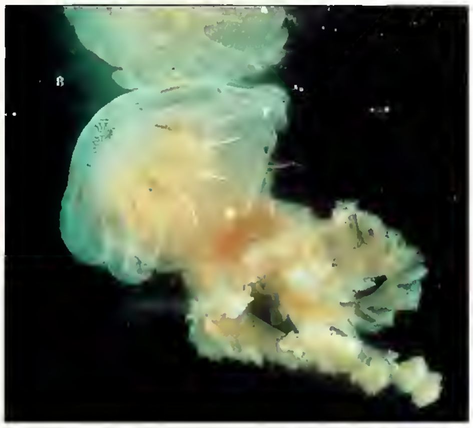
Robert Ancelet, Jack Cahill and Chuck Mancuso are marine biologists with the department's Marine Fisheries Division.

Fish That Carry a STING!

BY ROBERT ANCELET, JACK CAHILL AND CHUCK MANCUSO

Almost anyone who spends much time fishing or trawling in Louisiana's coastal waters is likely to encounter venomous marine animals at one time or another. Several species occur in our inshore waters where fishermen, trawlers and bathers may come into direct contact with them, sometimes with very serious consequences.

Most of the dangerous species found along the coast are fishes possessing venomous spines. The spines of fish, whether venomous or not, function primarily as defensive mechanisms. They increase the size of the fish, making it less vulnerable to predators. Poisonous spines may also inflict severe and even fatal wounds to would be attackers. As one might expect, these spines, with their associated poison glands, are usually found on slow-swimming, bottom-dwelling species. Although these protective adaptations are more highly developed in tropical regions, several species do occur in Louisiana.



Perhaps the most common encounter with venomous marine creatures is the painful sting inflicted by the much-hated hardhead or sea catfish, *Arius felis*. This common catfish, found in the bays and along the coast of Louisiana, is equipped with three venomous stings - a dorsal and two pectoral spines. These somewhat flattened bony structures have backward-projecting barbs on the front and rear margins and can be raised and locked as the fish wills.

Although venom is associated with all three spines, the delivery mechanism is different between the pectoral and dorsal spines. The dorsal spine is completely enveloped in a thin layer of sparsely pigmented skin which contains the venom. The pectoral spines have venomous tissue only near their base. Venom associated with the pectoral spines is produced by a structure called the axillary gland and is delivered via a small pore immediately above the base of the spines.

The severity of a catfish sting depends on the amount of venom received and the sensitivity of the victim. The pain has been described as an immediate stinging, throbbing sensation that may remain localized or may spread up the affected limb. Symptoms include redness, swelling and tenderness of the affected tissue. Large specimens are capable of producing severe lacerations and very painful puncture wounds. No known deaths are attributed to catfish stings, and the pain usually begins to subside after 20 or 30 minutes. Catfish wounds should be cleansed in available salt water in order to remove any remaining pieces of the sting.

The gafftopsail catfish, *Bagre marinus*, is not as likely to cause problems as is its relative, the hardhead. It is larger and generally easier to handle. Long filaments protruding from the tips of the spines make puncture wounds easier to avoid. Careless handling of a gafftop may, however, result in a very painful puncture or laceration.

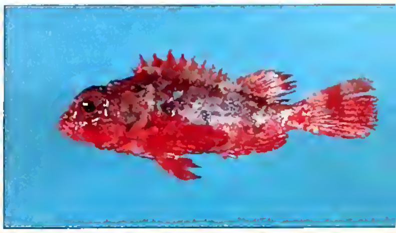
A rather menacing group of fishes capable of inflicting serious damage are the stingrays. Rays possess whip-like tails equipped with a dangerous venomous spine. A total of four species are found in Louisiana. The two most commonly encountered species are the Atlantic stingray or stingaree, *Dasyatis sabina*, and the southern stingray, *Dasyatis americana*. Stingrays are bottom dwelling fishes that spend much of their time half buried and motionless. They tend to flee when disturbed. However, if they cannot escape and the back of the fish is stimulated, as by an unsuspecting foot, a rapid stinging motion is provoked. The ray will whip its tail vertically over its back, striking with diabolical precision and deliberation.

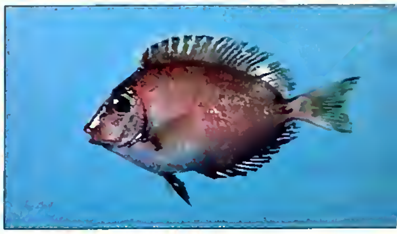
The sharp, arrow-like tip of the spine, located near the base of the tail, can penetrate the flesh of a victim with ease. The venom apparatus consists of a flattened, enamel-covered, serrated spine. On the bottom surface of the spine is a ridge running the length of the spine. On each side of this ridge are groves filled with tissue which contain the poison. The entire sting is covered with a thin layer of skin which is torn away when the spine penetrates the victim, exposing the serrated edges and releasing the venom.

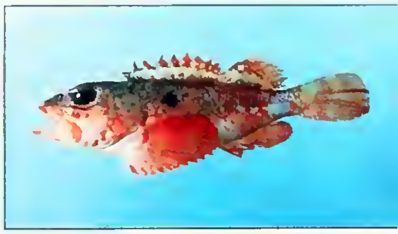
A stingray wound results in an immediate sensation of extreme pain, first in the vicinity of the puncture, then throughout the entire limb. This sharp, throbbing pain is often accompanied by a drop in blood pressure, vomiting, sweating, diarrhea, irregular heartbeat, muscular paralysis, and even death. First aid consists of washing the wound with available saltwater and removing any remaining pieces of the sting (both spine and/or associated tissue). Later, if possible, the wound can be soaked in a hot solution of magnesium sulfate (epsom salt). The services of a physi-

Photo at left courtesy Lafayette Museum of Natural History.

At left is venomous jelly fish, the sea nettle. Below from top are: barbfish, ocean surgeon and smoothhead scorpionfish.







Photos by Don Flescher

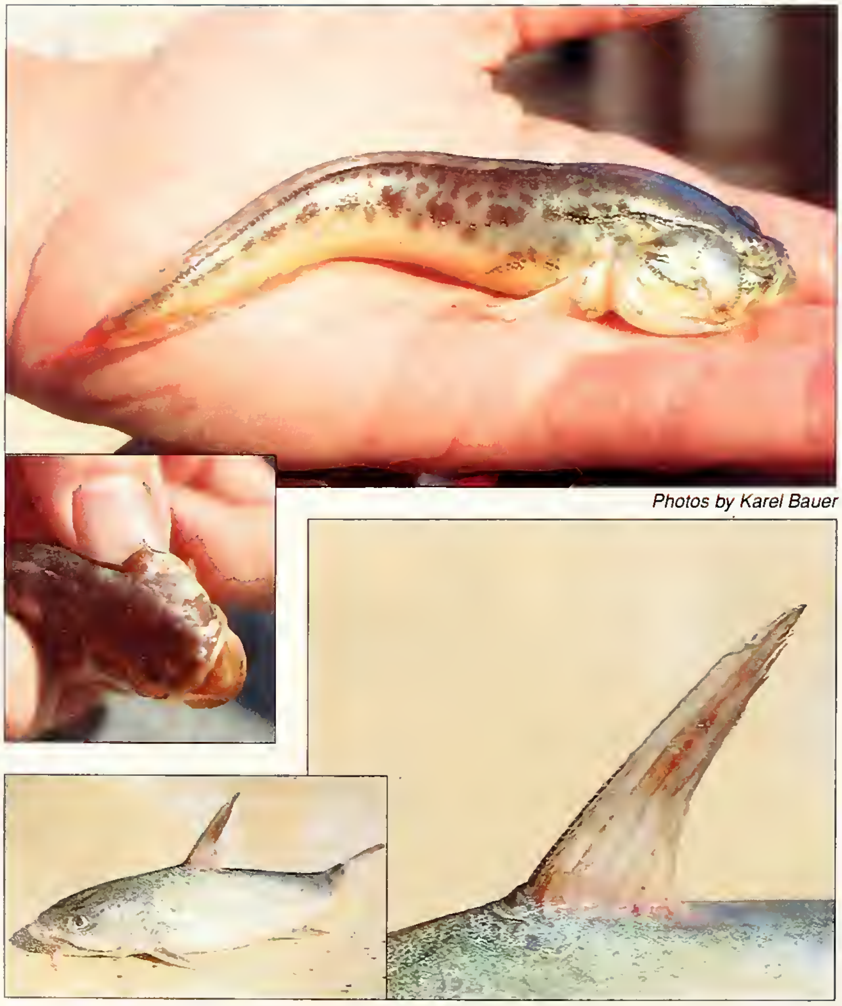
cian should be sought as soon as possible.

Another group of fishes that are sometimes encountered are the scorpionfishes of the family *Scorpaenidae*. These grotesque, colorful fishes will flare their strikingly marked fins in a gesture of defiance and warning while raising their venomous spines. Although there are no known fatalities due to scorpionfish stings, these fish are not to be taken lightly. They have caused serious complications, including amputation. These fish are usually found in the Gulf and rarely in inshore waters. The most common species are the spotted scorpionfish, *Scorpaena plumeri* and the smoothhead scorpionfish, *S. calcarata*. Fortunately for us, these two are not very poisonous. The somewhat rare barbfish, *S. brasiliensis*, found mostly in the Eastern Gulf, has been known to cause serious injuries requiring amputation.

A typical scorpionfish sting consists of a long, slender spine with a ridge on the front surface. Two adjacent groves contain strands of gray or pinkish tissue which are the venom glands. This arrangement, with minor variations, is found on the dorsal, pelvic and pectoral spines. Stings from scorpionfish result in intense pain, discoloration, swelling and hardening of the affected area. In severe reactions, the unfortunate victim may suffer nausea, pallor, loss of consciousness, rapid heartbeat and profuse sweating. There may be abscesses, necrosis, and sloughing of the affected tissues at the site of the wound. Serious stings require immediate medical attention. While the majority of scorpionfish stings are not serious, if one is careless in handling a netted or hooked specimen, the misery of a painful puncture wound is the price to pay. First aid is similar to that for stingray wounds.

Spotted scorpionfish, right, is common Gulf species. Below are two venomous fishes and their stinging apparatus. On top is the Atlantic midshipman, a small fish with a gill cover that ends in a small venomous spine. The often-encountered and much-maligned hardhead catfish is pictured at bottom.

Photo by George Grall



Photos by Karel Bauer

The surgeonfishes or tangs of the family *Acanthuridae* have dorsal, anal, and pelvic spines that are considered venomous. The general structure of their spines is similar to that of the scorpionfishes. In addition to these spines, surgeonfish have a retractable caudal spine near the base of the tail. This spine, which can be extended at right angles to the body, lies in an elongated depression when it is not extended. The lining of this depression is believed to secrete mucus and venom, thus constantly bathing the retracted spine in poison.

Surgeonfishes cause puncture wounds from spines and cuts from the sharp caudal spine. Pain is immediate and intense. Swelling soon follows. The pain normally subsides in about 12 hours, although it may last as long as a week. Treatment is similar to that of scorpionfish and stingray wounds. Surgeonfish wounds are painful and slow to heal. The doctorfish, *Acanthurus chirurgus*, is the most common of the three species occuring on our offshore reefs.

A common local member of the jack family is the leatherjacket, *Oligoplites saurus.* This small silvery fish (to 10 inches) has spines containing a small amount of venom. These fish should be handled carefully. Although its spines are small, they are extremely sharp and may produce intense pain for up to an hour.

Although some of its close relatives in the family *Batrachoidide* are highly venomous, the oyster toadfish, *Opsanus beta*, is not. A common fish in Louisiana bays, around rockjetties and oyster reefs, it is not deserving of its reputation as a venomous species. Large specimens may, however, inflict a painful bite with their powerful jaws. The only local member of the toadfish family that is venomous is the Atlantic midshipman, *Porichthys porosissimus*. This small fish, less than eight inches in length, has a gill cover which ends in a sharp venomous spine, but its sting has no serious effects on humans.

In addition to these venomous fishes, a number of invertebrates may inflict pain by injecting venom into an unsuspecting victim. Of primary importance are the jellyfishes. These animals employ stinging cells known as nematocepts to inject venom into the tissues of a victim. The effects of the sting vary from mild to severe depending on the species of jellyfish, the area of exposed skin, and the sensitivity of the victim.

The most important jellyfish found in Louisiana is the Portuguese man-of-war, *Physalia physalia*. These Gulf Stream inhabitants drift with the oceanic currents. Tenacles up to 15 meters long hang from a 350 mm float called a pneumatophore. Physalia can inflict a severe sting which is sometimes described as an electric shock-like sensation. The appearance of well defined linear welts or scattered areas of redness may be evident. The victim may also suffer headache, chills and fever.

Another dangerous jellyfish is the sea nettle, *Chrysaora*, whose sting is considered moderate to severe. Symptoms may range from a prickly sensation to a burning, shooting pain accompanied by muscular cramps, intense coughing, mental depression, difficulty in breathing and sensations of chest constriction.

Immediately after a jellyfish attack, the victim should get out of the water and remove any tentacles adhering to the skin. This can be accomplished by using sand, a towel, clothing, or any other available materials. Any tentacles remaining on the skin can continue to discharge their venom, causing additional wounds. In severe jellyfish sting cases, emergency medical treatment will be necessary.

The chance of an encounter with one of these venomous animals is small and should not detract from one's enjoyment of Louisiana's diverse marine habitats. Nevertheless, a little foreknowledge and a degree of caution can turn a potentially unpleasant situation into just another enjoyable day in the outdoors. □

The menacing-looking southern stingray, below, is one of four species of rays found in Louisiana. Its serrated spine can strike with diabolical precision.

Photo by Richard Bejarano

Photo by Keith Ibos

Photo by Doug Wechsler

Although some of its close relatives are highly venomous, the oyster toadfish, is not. It can, however, inflict a painful bite.

BY BOB MARSHALL

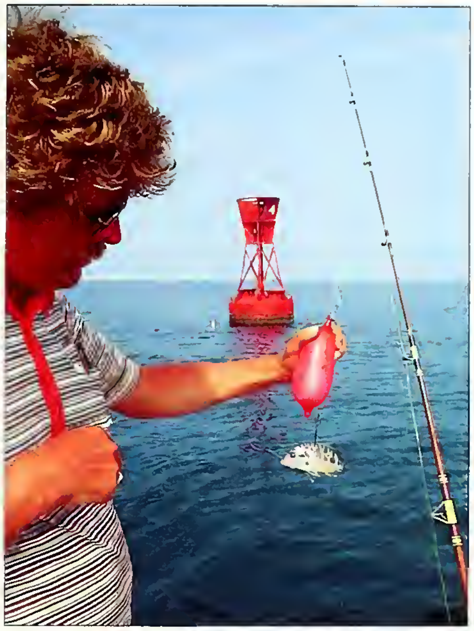
PHOTOGRAPHY BY JOEL ARRINGTON

LEMONS! LEMONS!

Bob Marshall is Outdoor Editor for the New Orleans Times-Picayune Newspaper and past president of the Louisiana Outdoor Writers Association.

11:05 a.m. — The Silver Bullet is floating in a Gulf so flat and clear Frank Nataros can see the sandy bottom 10 feet below. He is leaning over the gunnel, watching his tandem-rigged sparkle touts bob lazily through the green water off Caillou Bay, the picture of relaxation and composure.

But in a moment, two words shatter that composure. "Lemons! Lemons!" Johnnie Glover shouts.



Lemons like live bait, but will also hit bright colored jigs and touts, silver and gold spoons and topwater baits with bright colors.

A half-dozen fish cruise under the hull, moving through the water with powerful purpose, their shark-like profiles sending excitement through the party. Most appear to be between four and 10 pounds. Except one.

"Look at that one! It's a monster," Nataros yells, slapping his touts back into the Gulf.

The touts bounce once, twice, then disappear under the flat brown head of the biggest fish. Nataros' light rod bends in half, and the spool on the baitcasting reel begins to spin backward, surrendering 15-pound test line at a steady rate.

For a second, Nataros doesn't make the connection. Then it sinks in. "I got him, I got the monster!" he yells, beaming. "My God, look at it go!"

Below the water, the big fish is heading north, away from the boat. And Frank Nataros is giving his dwindling pool of line a first, worried look.

***Ichthyologists** call it Rachycntron canadus. Fishermen call it cobia or ling or lemon fish. In Louisiana, and to a larger degree along the Gulf Coast, it is a fish of some legend, a magnificent animal that appeals to a southern angler's greatest motivations: fun and dining.*

Built like a shark, with a body composed almost entirely of muscle, it is a test of pure power, the raging bull of light tackle — and a black angus, at that.

Until 10 years ago, it was a fish Louisiana anglers saw only far offshore in the very salty waters it prefers. Charter boats working bottom fish around the oil rigs, or big game fishermen heading for bluewater, tangled with lemons during the summer.

"When I was a child, lemon fish were something you heard about, but seldom saw, because they just weren't that accessible to a small boat guy," says the 40-year-old owner of Coco Marina who's been fishing the central Louisiana coast since he was five. "But things have been changing."

The change is erosion. As Louisiana's coast washes away at the rate of 60 square miles a year, its once brackish environment is becoming increasingly salty. Just 10 years ago, a 30-minute run from Glover's Coco Marina left a fisherman in the marsh, where estuarine species such as speckled trout, redfish and flounder provided the sport. Today, the same 30-minute run leaves a fisherman in open water that is greener and saltier.

The long-term impact of that development is a death sentence for everything coastal anglers have ever known. But the immediate impact includes access to a wider variety of species. One of those is lemon fish, the filet mignon with fins that can turn light tackle into Jell-O.

11:25 a.m. — Frank Nataros is reaching over the gunnel repeatedly poking the rod into the water with his left arm while his feet struggle to keep up with the fish dragging him around Glover's 29-foot boat. This is at least the 10th circuit.

From most angles it isn't clear who is winning, but one thing is undeniable; Nataros is having the time of his life. His face is glowing with the kind of smile last seen when Imelda Marcos walked into a Gucci store: part love, pure joy.

"This is incredible," he roars, dipping the rod around the twin outboards as the big lemon leads him around the boat again. "I've never seen anything like this, never."

That's some statement. Nataros has fished some of the most glamorous fishing holes in the world, many aboard his 87-foot yacht, the Anacay. He'd often heard about the glories of Louisiana fishing from Cajun sportsmen he'd encountered throughout the world. Now he was going to find out first hand on a two-day visit to Cocodrie.

On the first day, he was led to the eastern

Lemon fish hang out in the shadows of objects in clear water. Look for them around buoys, floating debris and, of course, oil rigs.

end of Timbalier Bay, hopping from well head-to-rig-to-barrier island. At least 15 different species were boated, and the globetrotting Nataros was wondering why he'd waited so long to experience Louisiana. But the biggest impression was made by lemon fish. Nataros had been thrilled by the fight of fish going to six pounds, and wondered what bigger lemons could do.

On the second day, he found out at Ship Shoal light. "This is amazing," he is saying, watching the fish head away from the boat again, taking even more line. "How long can he go on?"

Fishermen *in the other Gulf states, where salty green water runs right to the beach, know what Louisianans have been missing.*

"The spring migration run of cobias is as dependable as the swallows going to Capistrano," says Bob Shipp, a biology professor at the University of South Alabama, and author of Guide to Fishes in the Gulf of Mexico. "It's one of the most exciting and stirring migrations in the animal world, because it's so visible."

It is a south-to-north migration spurred by the temperature of the warming waters. Beginning in mid-March the lemons form into large schools somewhere off Key West and start working up the Florida coasts. "When they hit the Big Bend area, they turn west," Shipp said. "The people in Panama City and Destin head out to the piers and watch as the fish swim by."

The lemons keep moving west, and are spotted by anglers in Pensacola, Mobile and the barrier islands off the Mississippi coast.

"I'm sure they move past Louisiana, too," Shipp said. "But fishermen there probably haven't seen them in the past because of the murky water."

The water is clearing.

"In the past six years we've seen lemons more and more often," Glover said. "Last year, in fact, they were right inside the estuaries at a spot we call Pipeline Junction. That's just 15 minutes from the marina.

"People suddenly realize they can catch these fish, so they're starting to go after them."

11:50 a.m. — Sweat is now pouring from Frank Nataros' face, and the smile has a lining of worry. It has been 45 minutes since the battle was joined, and the fish shows no sign of tiring. It rests under the boat a minute or two, then heads out, or does laps around the hull. Nataros and his friends are experienced fishermen, and they know the axiom: Time is the fish's best friend.

At the moment, Nataros is standing amidship, leaning back into the rod as far as he dares, keeping pressure on the fish visible 10 feet below.

Now the lemon shakes its head. There is a sound of something slipping, and the rod suddenly straightens.

Louisiana *fishermen who look begin seeing lemon fish around the end of April. Sightings normally begin first around the shallow water rigs off Breton and Chandeleur sounds and Timbalier Bay — areas where the water is relatively clear.*

Small fish usually are sighted first, with larger fish moving in later. Lemons remain along and off the coast until the end of September or mid-October, when temperatures begin to drop.

"Lemon fish have particular habits, " Glover said. "They like clear water and they like to hang out in shadows. You find any kind of debris — logs, barrels, anything floating and casting a shadow — and you'll probably have a good chance of finding a lemon. Naturally, they like to hang around rigs."

And they are curious.

"If there are any lemons around a rig, you'll know the first minute you're there," Glover said. "They'll swim out and take a look. They can't resist."

11:55 a.m. — There is an awkward sound coming from Nataros' reel. It is the sound of screws coming loose.

Nataros looks with unbelieving eyes and emits a low moan: "Oh, noooooooo."

Apparently the last cleaning job Nataros did on the reel lacked one thing: tightening of the screws. Glover moves in with a screwdriver, frantically trying to keep the reel together before the fish makes another big move.

A lemons *favorite food seems to be catfish. Lemon fishermen like to catch small hardheads, remove their spines, and drift them live.*

But lemons also will hit plugs willingly; bright colored jigs and touts, silver and gold spoons, and topwater baits with bright colors all will work.

"And they're frenzy feeders." Glover points out. "Always leave the first one in the water. They're a lot like school dolphin: when one gets hooked and starts thrashing around, the others go into a feeding frenzy."

Getting them to hit can be a test — landing them can be pure hell. Once they hit, they take off through the water in long powerful runs, usually heading for rigs or other structure that can snap line and their adversaries.

12:05 p.m. — Worry has almost overtaken fun. When you put an hour into a fish, you begin counting your mistakes and wondering.

Nataros' experience has shown; he has played this fish by the book. But it hasn't given up. Once, it came to the surface and rolled, but was out of gaff range. Then it rested for five minutes under the hull. A minute ago it took off again.

"I've caught many, many marlin over 600 pounds, and I've been into 80-pound wahoo on light tackle," Nataros says through the shower of perspiration. "But nothing compares to the fight in this fish.

"How long has it been now?"

***Lemons** under six pounds are common in the spring when the first fish arrive. But summer lemons range between 20 and 60 pounds. Louisiana's record is 105 pounds, five ounces taken in 1980; it takes an 83-pounder to crack the state's Top 10.*

12:15 p.m. — Almost without warning the fish has risen to the surface, its head slowly turning toward the boat. Joe Schouest, the captain, reaches for the gaff and moves tentatively forward. As Nataros works the fish closer to the gunnel, the yells of encouragement quiet, almost as if the participants worry the fish might hear, and leave again.

"Come on big fella, come on," Schouest pleads. Nataros cranks in another yard of line, then lifts the rod high, dragging the exhausted lemon another foot closer. At the same time Schouest leans far out over the gunnel, extending the gaff. For a moment he pauses; the fish is still a foot away, maybe a half foot deep. Should we wait?

No. One lunge, the hook is sent home into the lemon's lip and Schouest pulls him onto the deck.

Pandemonium breaks loose. The lemon is flopping about, anglers are hugging Nataros, and screaming rebel yells. Nataros breaks loose and approaches the loser.

"Will you look at that," he marvels. "What a fish!"

(Frank Nataros' lemon fish weighed 52 pounds. There are no world records kept for 15-pound test line, but the men's record on 16-pound test line is 88 pounds.)

Getting lemons to hit is one thing, getting them in the boat is an entirely different matter. Lemons under six pounds are common in the spring, but in summer they range between 20 and 60 pounds. The Louisiana record is 105 pounds, five ounces.

Pete Juneau is a marine biologist and Area Study Leader with the department's Marine Fisheries Division.

Saving Our Embattled Sea Turtles

BY PETE JUNEAU

PHOTOS COURTESY U.S. FISH AND WILDLIFE

Five species of sea turtles inhabit the Gulf of Mexico and all five of them occur along the coast of Louisiana. Three of these sea turtles have been declared "endangered" under the provisions of the 1973 Endangered Species Act, and the other two species listed as "threatened" under the same act. The three endangered species include the Kemp's ridley, hawksbill, and leatherback. The threatened sea turtles include the green sea turtle and the loggerhead.

The Kemp's ridley, which is the most endangered of all the sea turtles, is small in comparison to the other sea turtles averaging about 30 inches in length and weighing approximately 100 pounds. It is olive-gray in color and has an oval shaped carapace.

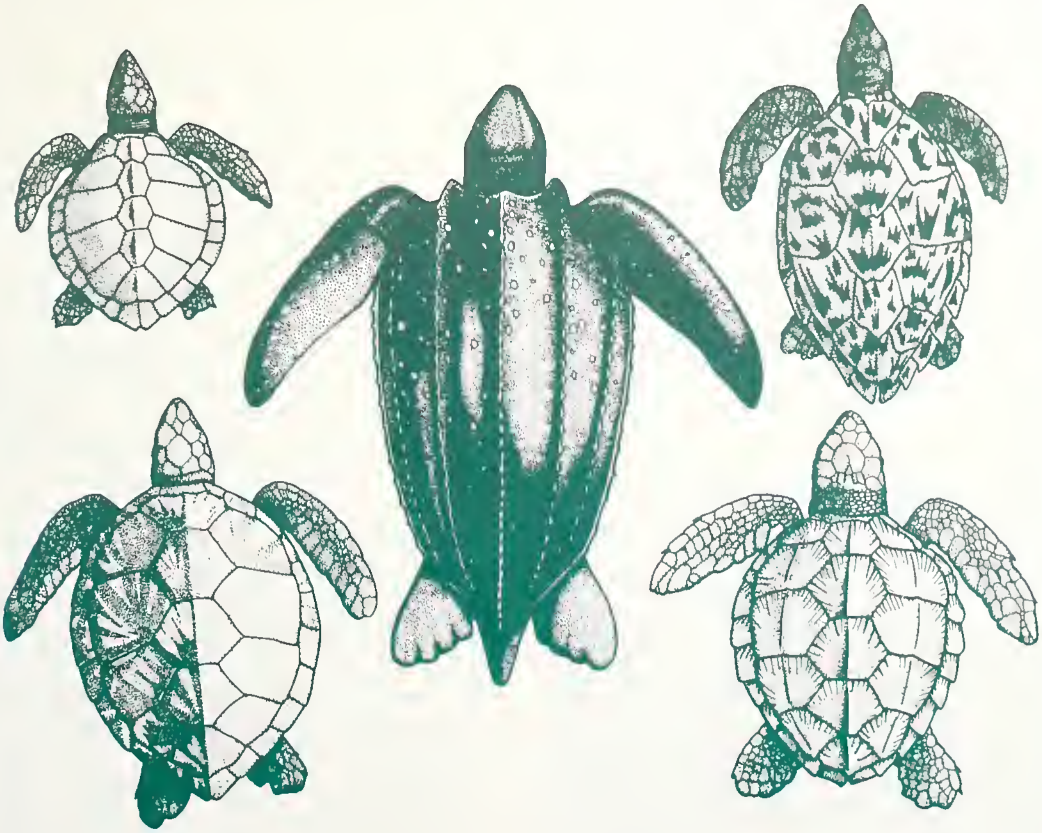
Kemp's ridleys are uncommon but occur in coastal waters and bays of the Gulf of Mexico and Atlantic Ocean. They feed mostly on shellfish. These turtles are now known to nest only along the beach at Rancho Nuevo in the state of Tamaulipas, Mexico where many of the eggs were carried off by local natives who believed that they act as an aphrodisiac.

The hawksbill is a small to medium sea turtle averaging up to 36 inches in length and weighing between 100 and 200 pounds. Its extraordinary hawk-like beak gives it the name hawksbill. Another distinctive characteristic is that the carapace margin is strongly serrate and is very attractive with thick overlapping scales. Because of this, the hawksbill has always been heavily preyed upon by man for its high value as jewelry. Hawksbill sea turtles are omnivorous but feed mainly on sponges. They also occasionally eat barnacles, sea urchins, marine grasses and sometimes algae.

Hawksbill sea turtles, unlike Kemp's ridleys, are solitary nesters and are thought to nest mostly in the Caribbean between April and November. They average about 160 eggs per nest and may nest more than once per season. However, they nest only in two to three year cycles. As with all sea turtles, hawksbills are subject to heavy predation in the egg and hatchling stages.

The leatherback, another of the endangered turtles, is the largest of all the sea turtles. It has been known to reach a length of six feet and weigh as much as 1,400 pounds. Unlike other sea turtles, the leatherback lacks scales or horny shields but has, instead, five to seven longitudinal ridges or keels which are rubbery.

Leatherback sea turtles are black in color with white patches. They have been known to travel great distances, but are mostly tropical and feed mainly on jellyfish. Leatherbacks may nest several times in a season in two to



The five species of sea turtles found in the Gulf are: top left, Kemp's ridley; bottom left, green; center, leatherback; top right, hawksbill and bottom right, loggerhead.

Hawksbill turtles, top right, are heavily preyed on by man for their high value as jewelry. Between the illegal theft of their eggs, predation by other animals and outright slaughter for meat, turtles face a tough time just getting back to the water.

three year cycles and generally nest between April and late July.

The loggerhead sea turtle is a large reddish-brown turtle with an unusually large head. Adults average about 36 inches in length and weigh between 150 and 400 pounds. Loggerheads have an oval to heart-shaped carapace and have jaws adapted to crushing heavy mollusks such as oysters and clams. They frequent wrecks and underwater structures and feed mainly on crabs, sponges and jellyfish.

Loggerheads may nest four to five times per season in two to three year cycles and average about 120 eggs per nest. Loggerhead sea turtles are listed as threatened and have lost much of their nesting habitat.

Finally, the green sea turtle is a medium to large sea turtle averaging about 36 to 48 inches in length and weighing about 300 pounds. It has an oval shaped carapace which is dark brown in color and may have yellow margins on the scales of the head. Green turtles are mostly tropical in nature and are usually found in shallow grassy bays and lagoons or shallow reefs and shoals where they feed on marine grasses and algae. Green turtles tend to be mostly herbivorous.

All species of sea turtles found in the Gulf of Mexico and Louisiana waters are subject to decreasing populations due to diverse reasons, including loss of nesting habitat, pollution, nesting predation on eggs and hatchlings both by natural predators and by man, illegal harvest of eggs, juveniles, and adults, and accidental catch or entrapment from assorted fishing activities.

Beaches where they normally nest are being lost to development or erosion. Some sea turtles are very sensitive as to where they nest and, if these areas are lost, long periods of time may pass before acceptable new nesting sites may be located.

Once nesting occurs, there is, in some cases, a high incidence of predation on eggs by various animals and by man himself. After hatching occurs, predation on juveniles and hatchlings is again very high by crabs, gulls, fishes and many other predators. Larger adult turtles are also illegally exploited commercially for their meat, skin, and shell.

Oil and gas exploration and incidental capture by trawling and fishing are problems which are now being addressed by various participants through new laws and by education. Finally, ocean pollution such as oil and chemical spills and floating refuse such as plastics present enormous problems to sea turtles striving to survive in their own decreasing habitat.

What can you, as an individual, do to help sea turtles survive? You can start by reporting sightings of dead or living sea turtles to one of our offices so that they can be properly documented and investigated as soon as possible. If the sighting occurs other than during office hours you can simply call the Department of Wildlife and Fisheries toll free number 1-800-442-2511 and be prepared to give the exact location (as accurately as possible) the sea turtle was sighted, the date and time it was seen, the general condition of the turtle, and most important, leave your name and a telephone number where you can be reached in case more information is needed.

If a live sea turtle is encountered, do not disturb it or attempt to capture it. Federal regulations forbid the capture or possession of sea turtles or parts of sea turtles including the meat, shell, skin, eggs or any other part.

Well, you ask, what am I to do if I accidentally capture a sea turtle in my trawl? Release it immediately! If it is in stress, a sea turtle may be resuscitated or revived by either placing the turtle on its back and pumping its breastplate using your hand or foot, or by placing the turtle on its breastplate and elevating its hind portion several inches (depending on size of turtle) for a period of one to 24 hours. Whenever resuscitation is administered the turtle should be shaded and kept wet or moist. Whenever the turtle becomes active it must immediately be returned to the water (as soon as trawls are not in use). Turtles that fail to be resuscitated must nevertheless be returned to the water in the same fashion.

And finally, you can do your part to help prevent ocean pollution in all its many forms. In the case of turtles, marine mammals and many bird species, this especially applies to plastics. A floating plastic bag or half-inflated balloon can look like an appetizing meal to a hungry turtle. Lodged in its throat, it will be the last meal the turtle ever eats.

Hopefully, by becoming more aware of these problems and addressing them through new laws and education, we will be able to make it possible to allow sea turtles to prosper in their own natural habitat. Only time, education, recognition of existing problems, and conservation will decide the future for these fascinating creatures. ☐

Sea turtles are very particular about where they nest. They return to the same spot year after year. When beaches are lost to development, so too are the turtles that used the beach to bear their young.

Only time, education, recognition of existing problems and conservation will decide the future of these fascinating creatures.

Photos by Kinny Haddox

Kinny Haddox is an outdoor writer and Manager-Communications for International Paper in Bastrop. He is past president of the Louisiana Outdoor Writers Association and is Louisiana state editor for Outdoor Life magazine.

BUSSEY BRAKE:

BY KINNY HADDOX

It's Still Hard to Beat

There are days in an a person's life that are always remembered: the day they got married, the day their children were born...those kinds of days.

There are also days that some of us sportsmen remember that don't necessarily fit into the "average" category. One of those days for me was opening day on Bussey Brake Reservoir, a 2,200 acre impoundment located just five miles north of my hometown of Bastrop.

I still have a living picture of that day in my memory, my mom and dad and I loaded up in my grandfather's old 1949 Pontiac with a 14-foot aluminum boat borrowed from our neighbor strapped securely to the top. We waited in line for almost two hours on that day, April 30, 1960. We finally got into the lake and began fishing with everyone else in Morehouse Parish, or so it seemed.

Bussey Brake had been completed in 1958 and it was stocked with largemouth bass, bluegill bream, black crappie and channel catfish. The old brake area that was already flooded inside the new lake's banks also had all kinds of sport fish, as well as rough fish like grinnel, gar and buffalo. The end result was that by opening day, the fish were as ready as the fishermen. They were caught by the barrels-full and the word about Bussey spread like wildfire.

Extensive surveying of fishermen and sampling of their catches was undertaken by the Louisiana Department of Wildlife and Fisheries in conjunction with International Paper, which built and managed the reservoir. The figures showed some startling results for the year 1960. That first year an estimated 60,000 fishermen visited the lake, spend an estimated 220,000 man hours and caught nearly 215,000 pounds of fish. Also, sales of resident fishing licenses in Morehouse soared from nearly 1,700 in 1959 to more than 2,700 in 1960.

It took a few years for Bussey to really catch on in other areas, but the jump in non-resident licenses was noticeable two years later, when the number rose from about 100 to more than 1,000. And remember, in those years, you didn't even have to have a license for crappie fishing.

So it was at Bussey Brake in the first years.

By the time the tenth year anniversary rolled around at the lake, creel studies showed there were even more fishermen, more fish and more pounds of fish caught than those first few years (fishermen were up to 78,888 and pounds of fish caught to 268,716 according to LDWF data).

The next decade saw some decline in fishing and there were a few lean years in there. Part of that was because of tough fishing. Populations were down some, fish weren't as easy to locate and there were other lakes in the area and in the south as a whole which opened up to take some of the pressure off of Bussey.

The funny thing is, things aren't that much different on the reservoir today than they were when it opened. Although the numbers aren't officially kept as closely as they once were, there isn't a pretty Saturday that goes by when the parking lot at Bussey isn't full. There are still hundreds of local residents who don't fish anywhere else and you hardly ever go there when out-of-state cars aren't parked in the lot.

The reason is simple. Today's Bussey is still a top-flight lake for catching fish.

The lake was stocked two years ago with Florida strain largemouth bass to try and develop a larger strain of bass. For the most part, bass caught in the lake for the past five to six years have been on the small side, but they have been plentiful. Best lures when the vegetation is thick are worms and buzzbaits. Crankbaits and spinnerbaits are also excellent producers through the spring and summer.

The lake produces thousands of crappie

The lake was stocked two years ago with Florida strain largemouth bass. For the most part, bass caught in the lake for the past five to six years have been on the small side, but they have been plentiful.

Flathead catfish up in the 40-50 pound range are not uncommon. Lots of them are caught in the summertime on trotlines and stump lines.

Photo by Kinny Haddox

Photo by Bob Dennie

The lake also produces thousands of crappie each spring, many of them small ones that school in the deep hole right in front of the boat dock.

each spring, many of them small ones that school in the deep hole right in front of the boat dock. On some cold January mornings, there are up to 30 or 40 boats within a 100 yard stretch in front of the dock, waiting for the fish to bite.

Other top crappie areas are the deep channels around the edges of the lake where dirt was dug out to make the man-made levees. Crappie also run on the edges of the timber lines and in some of the small flats. Jigs and shiners are equally effective in taking white perch.

Bream fishing has been good over the years with lots of fish. However, in recent years many areas of the lake have been full of small bream, a sign of overabundance of the species.

The king of Bussey bream is the chinquapin, or redear. The big bream with the orange spot on their gill plate often go over a pound and a half and they fight like a five-pound bass.

Popular areas also include the edges of the two cypress tree windbreaks which cross the lake and the big flats in the west central area of the lake known as the pine ridge. Live bait like worms and crickets work well for bluegill, and you can't beat small live crawfish for the chinquapins.

One fish that hasn't gained a lot of popularity, but still gives fishermen quite a thrill is the hybrid striped bass that have been introduced into the lake in the past decade. These fish are running in the six to twelve pound class and can be caught on crankbaits out in the open water areas of the lake and along the channels.

As for catfishermen, there are lots of fish caught in the summertime on trotlines and stump lines. Flathead catfish up in the 40-50 pound range are not scarce. And if they aren't big enough for you, try the big buffalo that usually hang out in the deeper water by the water intake on the southeast corner of the lake. It isn't uncommon for people to catch 60 and 70 pounders there on doughballs or by snagging. In fact, several record buffalo have been caught from the reservoir.

A look out across Bussey today doesn't bring back many memories for someone who hasn't seen the lake in a long time. Where the lake was once so thick you couldn't see 100 yards, now you can see from one corner to the other. Only a few big trees are left and those stout cypress probably won't be with us for long. The lake is now full of stumps and boating can be hazardous for someone who is not familiar with the channels.

Bussey has a "new" type of structure that the fish have taken too like bees to honey. It is aquatic vegetation, all kinds of moss and lilly pads. While some fishermen don't like the vegetation, veteran fishermen on the lake realize that without it, fishing would not be as good. As the moss and lilly pads grew more prominent in the lake, the fishing has picked up over the past few years. If it continues to grow fast, it could present a problem in the future, but it wouldn't be anything new for Bussey.

Just four years after Bussey was built, the shallow water areas became infested with weeds. On October 28, 1962, a drawdown was begun which uncovered much of the shallow water for the winter. Refilling the lake from Bayou Bartholomew by pumps was completed in late May of 1963.

That seemed to alleviate most of the vegetation problems for a long time. A drawdown of the lake has been studied as a possible solution in the future if the problem gets too bad, as has the use of chemical control, but neither seems feasible at this time.

International Paper still manages the lake and maintains the levees and launching ramps. The company uses Bussey Brake as an emergency summer water supply for its Louisiana mill. The past three years, the mill has had to rely on water from the reservoir and it has kept the economy of the town from suffering in low water periods in the bayou.

There is still only one launching area for bigger boats on Bussey, but it is a modern, three-lane ramp constructed by the company. It is located on the northeastern corner of the lake along La. Hwy. 593 north of Bastrop where there is also a lake store, campground, picnic facilities and parking lot.

There are six more access points along the eastern side of the lake where aluminum boats can be carried up the levee and put in. Also, there are two fishing piers, one on each end of the lake, which were built by the company just two years ago for increased access by the public.

Bussey has always been open to the public, although there are fees for boat launching and camping.

All types of boats are allowed in Bussey now, but there is still no swimming or skiing. It is strictly a fishing lake, just as it has always been. There are also no fishing tournaments allowed on the lake.

When the lake was first opened, no outboard motors were allowed on the lake to help protect the levees. The only motors that were allowed were electric motors. After 1961, the regulations were changed to allow three-horsepower motors and later the limit was raised to ten horse motors after rip-rap had been placed completely around the lake's levees to secure them. Today the bigger motors are allowed, but don't cause damage due to the rocks that line the lake.

Bigger motors, bigger fish, and on some days, even bigger numbers of fishermen are signs of the times at Bussey Brake as it nears its 30th birthday. Come to think of it, it may not just be getting older, it may be getting better, too. ☐

Photos by Bob Dennie

Bussey has always been open to the public, although there are fees for boat launching and camping. Also, there are two fishing piers, one on each end of the lake, which were built just two years ago for increased access by the public.

Sunflowers (foreground) and giant plume grass (background)

PHOTOGRAPHY AND ARTICLE
BY DR. CHARLES ALLEN
AND DR. MALCOLM VIDRINE

Wildflowers

of the Cajun Prairie

Dr. Charles Allen and Dr. Malcolm Vidrine both teach at LSU in Eunice. Dr Allen is professor of botany and Dr. Vidrine is professor of biology.

The word "prairie" to most people probably conjures up an image of a treeless area with a dense growth of grasses. C.C. Robin visited southwestern Louisiana in 1803-1805 and in his book "Voyage to Louisiana" described the area in this way, "Crossing the wide prairie, strewn with flowers whose stems raise them to the height of the horse on which the traveler is riding, surprise follows surprise in this varied vegetation."

At that time, there was an area of grassland in southwestern Louisiana that has been called Attakapas Country or The Great Southwestern Prairie. Since most of the early settlers on this grassland were Cajuns, perhaps a more appropriate name is Cajun Prairie.

Cajun Prairie was located in southwestern Louisiana between the Atchafalaya and Sabine rivers. Samuel Lockett visited the area in 1869-1872 and estimated that the prairie occupied an area of 3,880 square miles (2.5 million acres). Lockett's findings were published in 1969 in a book titled "Louisiana As It Is."

CAJUN PRAIRIE
RESTORATION PROJECT
ENDANGERED WILDFLOWER HABITAT
EUNICE, LOUISIANA
PROTECT & PRESERVE THIS HABITAT
SPONSORED BY
CITY OF EUNICE
UNION PACIFIC RAILROAD
JEAN LAFITTE NATIONAL HISTORICAL PARK
LOUISIANA STATE UNIVERSITY AT EUNICE
LIBERTY CULTURAL ASSOCIATION
A SOUTHERN ARTS INITIATIVE
EUNICE KIWANIS CLUB
EUNICE CHAMBER OF COMMERCE

The Cajun Prairie Restoration Project in Eunice officially began when Mayor Curtis Joubert tossed out the first seeds on the site on December 9, 1988.

This prairie was developed in an area with flat terrain but with an average of 50 plus inches of rainfall per year. Forests are usually produced in an area that receives more than 25 inches of rainfall per year. It is therorized that Cajun Prairie was produced in southwestern Louisiana because of the presence of a densely packed, hard clay layer that was located 8-15 inches below the surface. The roots of trees usually penetrate much deeper than grasses and other herbaceous plants but could not penetrate the clay layer. Fires, perhaps set by lightning and later by Indians and still later by European settlers, also helped to retard the growth of trees.

The grasslands were not continuous but dissected by finger-like gallery forests that developed along the streams that drained the region. These gallery forests divided the grasslands into several smaller, named prairies such as Calcasieu, Little Calcasieu, Grand, Hays, Faquetaique, Mamou, Sabine, Vermilion, Mermentau, Plaquemine, Robert's Cove, Opelousas, D'Arbonne, Swallow, Long, Beau Basin, Cote Gelee, Au Large, Cypremort, Choupique, and Godfrey's.

The prairie was relatively intact in 1870 when Lockett visited and described the broad treeless areas covered with a luxuriant growth of grass. He also stated that "altogether I look upon the prairie region as naturally the loveliest part of Louisiana." Today, most of the prairie has been destroyed and replaced by cultivated crops, in particular rice. A few remnant strips remain and almost all of the surviving Cajun Prairie is located along railroad rights of way. This land was purchased by the railroad companies as the tracks were laid across the region. Most of these strips were never tilled or have not been tilled since the railroad obtained the land.

The strips are all very narrow, mostly less than 100 feet wide, and the longest unbroken strips are approximately 1/2 mile long. There are fewer than 30 of these strips scattered throughout the area. Our estimate of the remaining, intact Cajun Prairie is less than 200 acres. "The Natural Communities of Louisiana," a publication by the Louisiana Natural Heritage Program of the Department of Wildlife and Fisheries, December, 1988, rated the Cajun Prairie (Coastal Prairie) as S1—one of the most critically imperiled habitats in the state and vulnerable to extirpation.

We have located as many of these strips as possible and have studied ten of the strips intensively for the last two years. We walked each of the ten strips every two weeks from February to November and recorded which plants were present in each strip and also the species that were in flower each time. Approximately 5,000 photographs were taken so that the seasonal changes could be recorded.

We have found that the Cajun Prairie is not a giant area of grasses only but an area with patches of dense, tall grasses that are interspersed with "gardens" of other herbaceous plants that produce large spectacular flowers. The prairie is everchanging with different flowering plants replacing those that have completed their flowering process.

Approximately 500 different species of plants have been located in these remnant strips. The more common grasses are big bluestem, switch grass, Indian grass, slender bluestem, little bluestem, broomsedge, and Florida paspalum. Most of these grasses are short early in the year and stand up and out from July to the end of the year.

Cajun Prairie has several interesting groups of plants with the members of the sunflower family being the most conspicuous throughout the year. The sunflower family includes blazing star, compass plant, golden rod, aster, golden aster, mist flowers, throughwort, ironweed and several others.

The bean or pea family is also well represented on the Cajun Prairie especially in the Spring and includes false indigo, sensitive

FEBRUARY/APRIL

White false indigo

Phlox

Spring tickseed (yellow)

Spider lily

Prairie parsley

Grass pink orchid

MAY/JUNE

Wine cup

Sensitive brier

Obedient plant

Black-eyed susan

Mountain mint

White ladies' tresses orchid

JULY/AUGUST

Compass plant (yellow) and blazing star (pink)

Blazing star

Ironweed

Red milkweed

Indian plantain (white) and red milkweed (red)

Wild coco orchid

SEPTEMBER/NOVEMBER

Golden aster

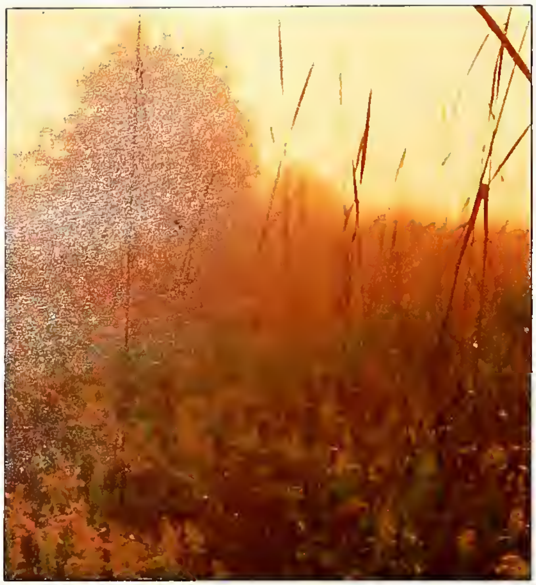
Indian grass

Aster

Thoroughwort

Blazing star

Big blue stem



Goldon rod (yellow)

Pale cone flower

brier, yellow puff, Sampson's snakeroot, and others. The mint family sticks out for its beauty and odor and several members of this family were probably used for spices by the Cajun settlers. Mints from the Cajun Prairie include bee balm, blue sage, skullcap, and a few others. There are three sensitive plants (leaves fold up when touched) on the Cajun Prairie including sensitive brier, yellow puff, and mimosa.

From the middle of February through April, the tallest plants are false indigo with several yellow flowered species and one white species. Some areas will be covered with dense patches of blue provided by blue-eyed grass, phlox, violet wood sorrel, skullcap, or spiderwort. Scattered patches of yellow would probably be false dandelion or yellow wood sorrel and large patches of yellow would be the Spring tickseed (Coreopsis). White to light lavender flowering plants include daisy flea bane, beard tongue, colic root, and two kinds of wild onion. In the wetter spots would be large masses of white flowers of spider lily broken by small clumps of blue star. Scattered across the strips are the yellow-green umbels of prairie parsley. A very rare orchid, grass pink (Calopogon) with large dark lavender flowers was found in a very limited number in some of the strips.

The greening of the Cajun Prairie occurs mainly during May and June as the grasses start to grow. The spectacular red flowers during this time would be the scattered plants of wine cups and pink to light purple of sensitive brier, obedient plant, gaura, bee balm, and meadow beauties. Pale cone flowers produce a contrast with pale rays and dark centers or discs. Black-eyed susans and compass plants produce large masses of yellow and the yellow puffs produce scattered patches of yellow. A short lived but spectacular display of blue is produced by Sampson's snakeroot. White flowers are produced by prairie clover, mountain mint, and flowering spurge with the latter very common. The white ladies' tresses orchid (also called corkscrew orchid) can also be found during this time.

In July and August, the grasses start to stick out but there are large patches of yellow flowers of compass plants, sunflowers, and partridge peas. The most striking of all prairie plants, the blazing stars, also start to flower at this time. Blazing stars are mostly blue but appear reddish under certain light. Blazing stars produce large masses of flowers on each plant and there are usually many plants in an area and this produces the maximum show. Scattered throughout the Cajun Prairie are plants of ironweed which, like the blazing stars, produce blue flowers that are reddish under certain light. Red colored flowers of the red milkweed also appear during this time. This is probably the season with the maximum display of white flowers with large masses of button snakeroot, Indian plantain, and thoroughwort. Another rare orchid (wild coco) starts to flower in August. It produces small burgundy flowers that are hidden among the grasses.

The browning of the prairie starts in September and continues through November. Several golden rods, sunflowers and golden asters add much yellow to the Fall Cajun Prairie scene. The sweet golden rod with its strong licorice odor adds a great aroma to a walk through the prairie during this season. There are also several kinds of asters, some with white rays others with lavender or even blue rays but all with yellow centers of disc flowers. The purple false foxgloves provide an early morning splash of pale lavender to almost purple but it is usually gone by noon as most of the flowers fall daily. The tall lavender thoroughwort and blue sage and the shorter mist flower, blazing star and blue lobelia add to the Fall scene. But, grasses are hard to miss with their basic green interspersed with the pale blue of the big blue stem, the bright yellow of Indian grass, and the light yellow to brown and red of all grasses as November approaches.

The time between November and February is very important and is the time for blackening of the Cajun Prairie by fires. The fires do not hurt most of the native prairie plants as most are perennials and their "overwintering" parts (roots, rhizomes, corms, bulbs, etc.) are located underground. The fires sweep over the top and destroy trees and shrubs. This keeps the Cajun Prairie intact and the following February, the greening of the prairie begins as the plants sprout from their "overwintering" parts. The first up are usually wild onion and false indigo to signal the start of the greening of the Cajun Prairie.

We realized that these remnant strips along the railroads could be easily destroyed and looked around for a site on which to restore Cajun Prairie. This led to the start of the Cajun Prairie Restoration Project: Endangered Wildflower Habitat in Eunice. The location of the site in Eunice was spearheaded by Mayor Curtis Joubert. He, with authorization from the Eunice City Council, leased ten acres of land from Union Pacific Railroad. This site is located at the corner of Martin Luther King Drive and Magnolia Avenue in the northeast part of the city. The City Council recently passed a resolution declaring the area a Cajun Restoration Project which gives the site status as a city park.

Seeds were collected from the remnant strips by students, faculty, and parents. These seeds came only from the Cajun plants on the strips and are as "Cajun as Cajun can be." The restoration site was herbicided and control burned. Mayor Curtis Joubert tossed out the first seeds on the site on December 9, 1988. Students, faculty, and parents then sowed the seeds that they had collected. After seeding, the area was lightly tilled. Selected, nonrare plants were also transplanted from the remnant strips to the restoration site in Eunice. Plants from many different strips are being placed together on the Eunice site which will portray the monthly changes in prominent and conspicuous blooms.

The Cajun Prairie Restoration Site in Eunice is an area where prairie can be restored and protected. The area in Eunice will be safe from chemical spraying, plowing, construction, or any of the other destructive catastrophes that could happen to the remnant strips.

Cajun Prairie was never studied in detail, and we may never know what plants grew in the original Cajun Prairie nor how many or which Cajun Prairie plants are now extinct. This restoration will provide perhaps the only chance to walk back through time and study and document what Cajun Prairie was—and through this project still is. ☐

Golden aster

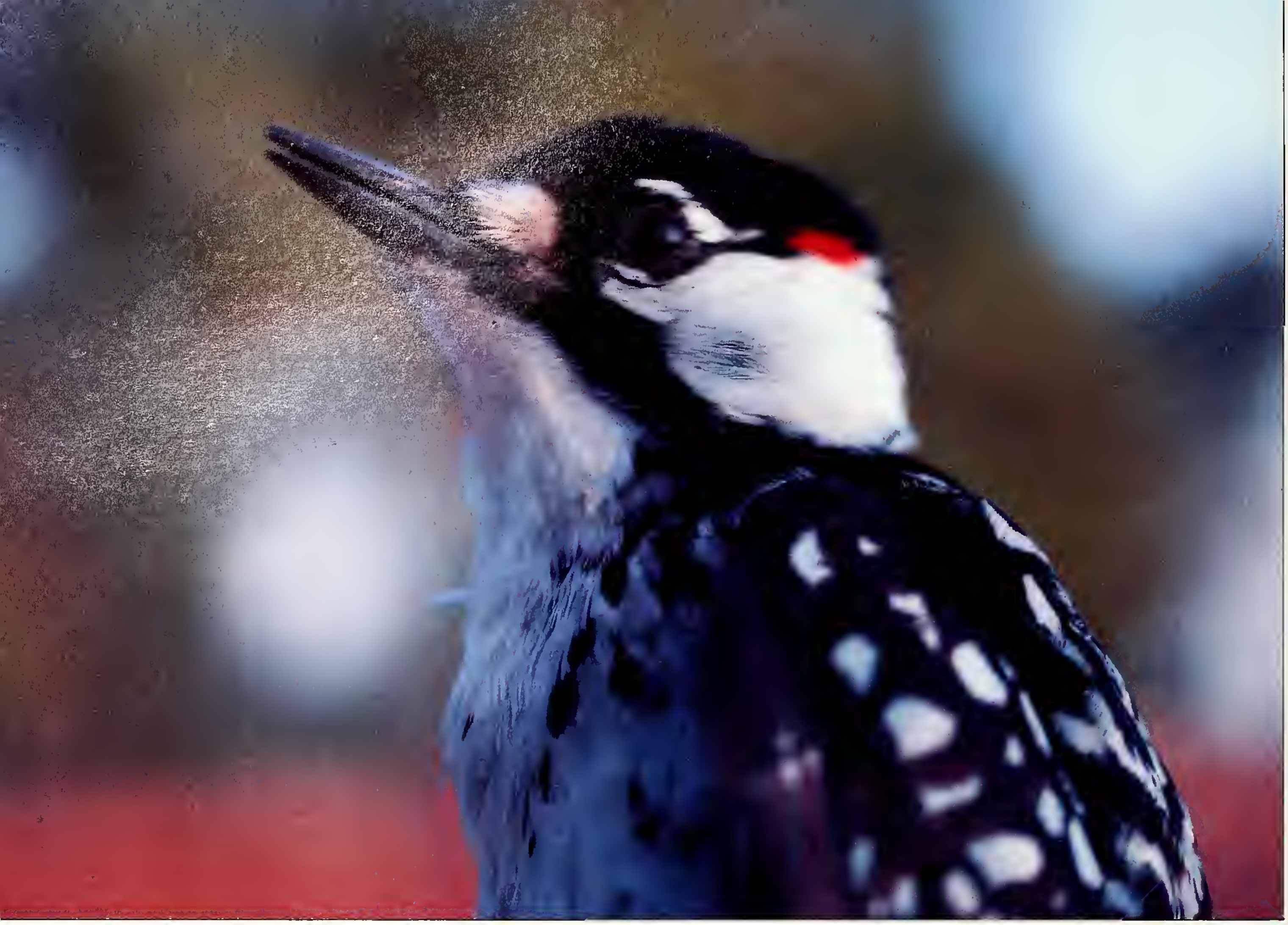


Photo by Jerome Jackson

Richard Martin is a zoologist with the Louisiana Natural Heritage Program, a section within the department's Habitat Conservation Division. The program monitors the status and distribution of rare species in Louisiana and works statewide for their recovery.

Red-Cockaded Woodpecker:

Managing to Survive

BY RICHARD MARTIN

The task of managing rare, threatened and endangered species is difficult because there is little room for error: once a species is lost, it is gone forever. When examining the causes of the decline of a given species and recommending avenues to insure its survival, factors such as habitat requirements, reproductive biology, food habits, and genetics, all tempered by the economic implications of any management action must be considered.

One endangered species that illustrates the difficulties in managing rare species is the red-cockaded woodpecker, *Picoides borealis*. The specific epithet, borealis, Latin for northern, was given by the 19th century French naturalist Louis Jean Pierre Viellot who mistakenly assumed that this species was found in the northern U.S.

In reality, the red-cockaded is endemic to the pine forests of the southeastern U.S. and is resident from eastern Oklahoma and Texas, east to Georgia and Florida and north as far as Tennessee, south-central Kentucky and eastern Virginia. This species was formerly found in Pennsylvania, Missouri, and Maryland.

Red-cockadeds were considered common or abundant by early naturalists. However, by 1950, biologists began to notice a significant constriction and fragmentation of the range of this species, which was directly related to commercial harvesting of pine forest. Extensive clearing of pine forest was responsible for a great deal of the decline. In addition, conversion of mature, uneven-age stands of pine (especially the slower-growing longleaf) to short-rotation loblolly and slash pine plantations was also detrimental. It is estimated that less than three percent of the commercial pine acreage in the South is suitable nesting habitat for red-cockaded woodpeckers.

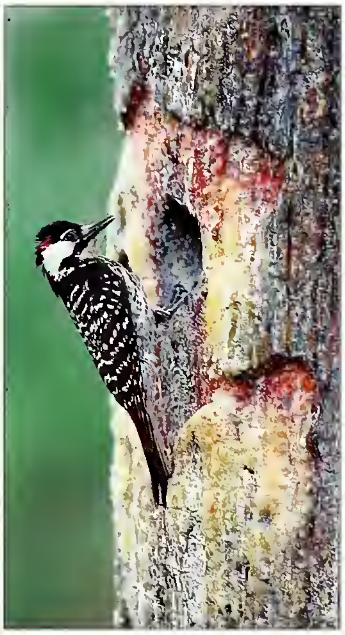


Photo at right by Julia Sims

In 1970, because of the decrease in the amount of available habitat and the documented decline in abundance, the red-cockaded woodpecker became one of the first species listed as endangered by the U.S. Fish and Wildlife Service. Despite being listed for 18 years, the species continues to decline in abundance and the threat of additional local extinctions is great. It is estimated that there are between 5,000 and 10,000 red-cockades remaining throughout its range, and only 750 to 1,000 in Louisiana.

This distinctively patterned woodpecker is about 8 1/2 inches long. The plumage is principally black and white, with the diagnostic field mark being the large white "cheeks," which contrast with the solid black crown and nape. This is one of the so-called ladder-backed woodpeckers because of the black and white bars on the back.

Adult male red-cockaded woodpeckers possess small patches of red feathers on either side of the rear portion of the crown (the "cockades"). These red feathers are rarely visible except during courtship or territorial displays. Juvenile males possess a patch of pale red feathers on the top of the crown that is lost after the first molt.

Red-cockaded woodpeckers are one of the few woodpeckers that exhibit a social breeding system: one or more unmated birds often assist the mated pair rear their offspring. These "helpers" are usually male offspring of the dominant male from previous nesting seasons. The mated pair, unmated helpers and the current year's offspring form what is termed a "clan."

One of the most interesting aspects of red-cockaded woodpecker life history, and the one that has led to its decline, is its dependence on mature, living pines for cavity excavation. Red-cockadeds are part of the southern pine ecosystem, which evolved under the influence of regularly-occurring natural fires. Most southern pines, especially longleaf, have developed adaptations to fire. Because fire was a common aspect of the habitat occupied by red-cockades, and mature, live pines are resistant to burning during fires of normal intensity, excavating cavities in live trees would be advantageous.

While excavating cavities in live trees is beneficial, it is not without some cost. The wood of living pines is extremely hard and it may take a year or more for a red-cockaded woodpecker to complete cavity excavation. In contrast, woodpeckers that nest in snags may only require a few weeks to complete a cavity. Because so much energy is expended excavating a cavity, individual cavities are used for many years and cavity trees may be used by several generations of woodpeckers.

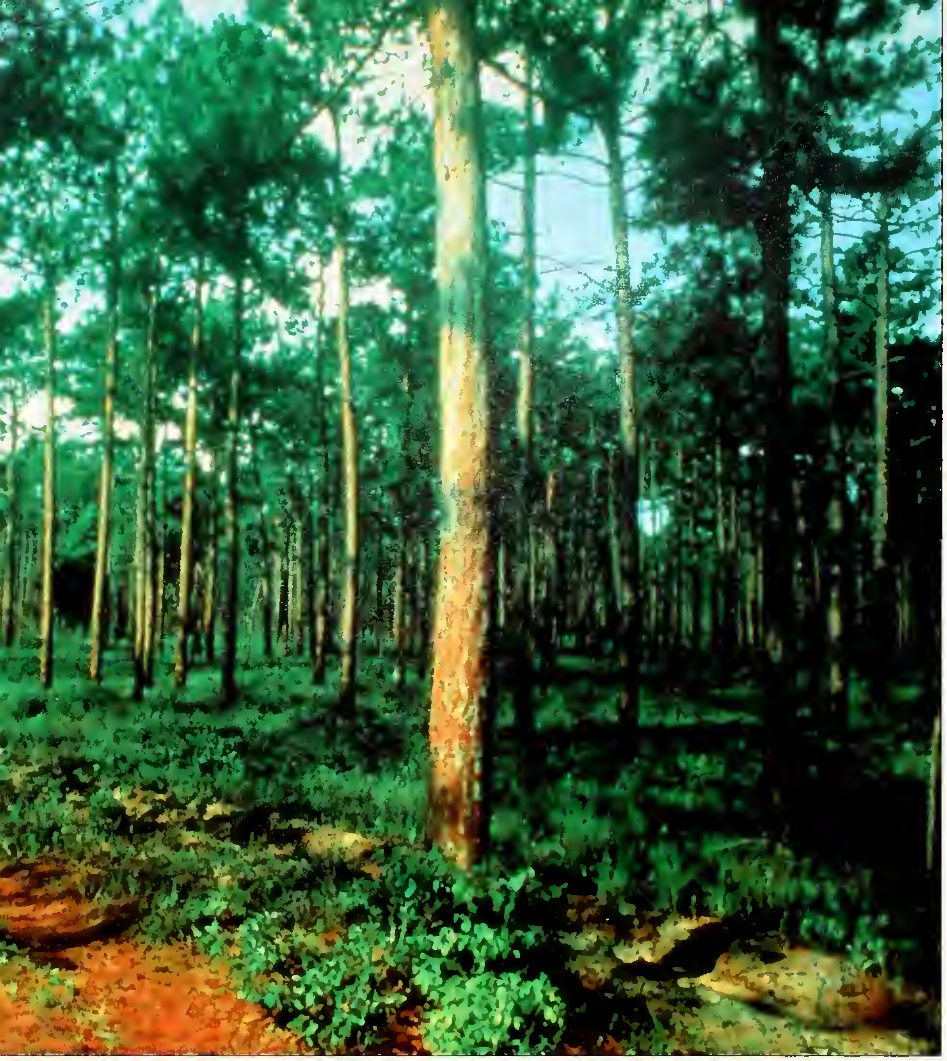
Cavity trees tend to be infected by a fungus that decomposes the heartwood, a disease called "red heart." It is probable that red-cockaded woodpeckers select trees infected with red heart because it makes cavity excavation easier. Red heart generally afflicts mature trees, which corresponds to the selection of old trees (e.g., 100+ years for longleaf, 75+ years for loblolly) for cavity excavation.

Red-cockaded woodpeckers excavate shallow pits called "resin wells" around the entrance to their cavity. Resin is secreted from resin wells and, after several years, a considerable portion of the trunk may become covered, giving the tree a waxy appearance, which has given rise to the term "candlestick tree." It is thought that the buildup of resin repels potential predators, such as rat snakes.

Cavities are used for roosting as well as nesting, and each member of a clan has its own cavity (often in the same tree). The assemblage of cavity trees used by a clan is termed the

Because fire was a common aspect of the habitat occupied by red-cocades, and mature, live pines are resistant to burning during fires of normal intensity, excavating cavities in live trees would be advantageous.

Photo by Ralph Costa



"colony." All the active cavity trees in the colony are usually limited to an area 10 acres or less in size.

The nesting season usually spans mid-April to early July. Two to four eggs are laid in the breeding male's roost cavity. The incubation period is approximately 10 days and the young fledge 24 to 29 days after hatching. Renesting may occur if the initial clutch is lost early in the nesting cycle; however, there is no evidence that a pair will raise more than one brood in a single season.

Helpers assist the mated pair with incubating the eggs, and feeding and brooding the nestlings. Nesting success is greater in clans with helpers compared to those composed of just the mated pair.

Most juveniles disperse from their natal territory during late fall, winter, and early spring, although some juvenile males remain and become helpers during subsequent nesting seasons. Females wander until they are accepted by a clan that has lost its breeding female. For this reason, care should be taken to minimize habitat fragmentation and to connect adjacent colonies with suitable habitat.

Unlike most other woodpeckers, red-cockades rarely feed on wood-boring insects; rather they capture insects, spiders, etc., from underneath bark. Occasionally, fruits such as poison ivy berries are eaten. Red-cockaded woodpeckers are territorial and defend the colony site as well as 100 to 1,000 acres of surrounding pine forest used for foraging habitat.

High quality red-cockaded habitat consists of open stands of mature pine (preferably longleaf), with little hardwood in the midstory. Historically, the constant exposure of southern pine forests to natural fire limited hardwoods primarily to moist drainage bottoms and gave the forests an open, park-like appearance. Because of numerous fire breaks and fire-suppression efforts, natural fires no longer burn large amounts of forest, and hardwood encroachment into pine forest has become a major problem.

If an extensive hardwood midstory develops in the colony area, red-cockadeds will usually abandon the site. One plausible explanation for this is that other woodpeckers, such as pileated and red-bellied woodpeckers, prefer hardwood forests, and those species will move into pine forest if the hardwood component increases. Those species will often evict red-cockadeds from their cavities. Flying squirrels, which are known predators of red-cockaded eggs, also are more common in for-

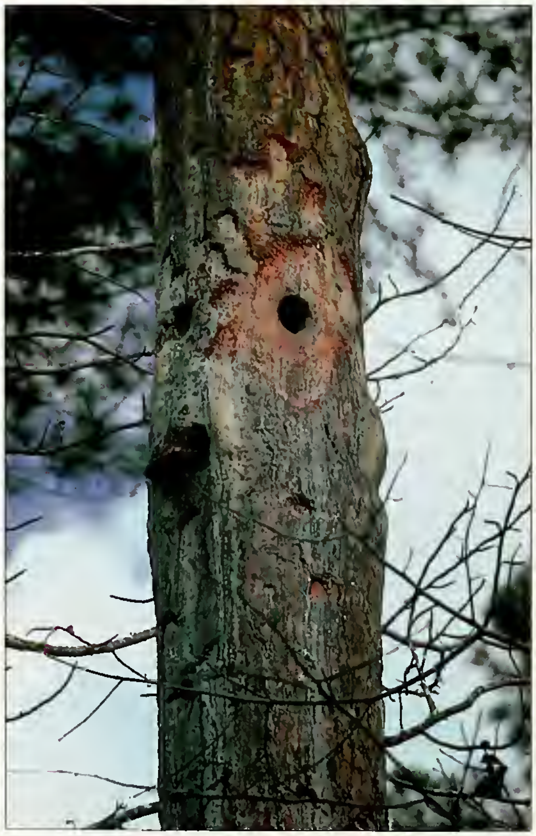


Photo by Jerome Jackson

High quality red-cockaded habitat (top) consists of open stands of mature pine with little hardwood in the midstory. "Candlestick tree" can be seen in center of foreground. Pictured at right is classic red-cockaded cavity tree showing the fruiting body of the red heart fungus at the lower left of the cavity.

ests with an abundance of hardwood. Thus, management of pine forests for red-cockaded woodpeckers relies on the regular use of controlled burning.

At least 90 percent of the active red-cockaded woodpecker colonies in Louisiana are found on Kisatchie National Forest and Fort Polk; the remaining colonies are widely distributed and occur singly or in small groups. The last known concentration of red-cockaded colonies off of federally-managed land was in Morehouse Parish and a 1988 survey documented that only four of 52 known colony sites were still occupied. Similar surveys on Kisatchie National Forest produced results that were more encouraging; more than 60% of the known colony sites were still active.

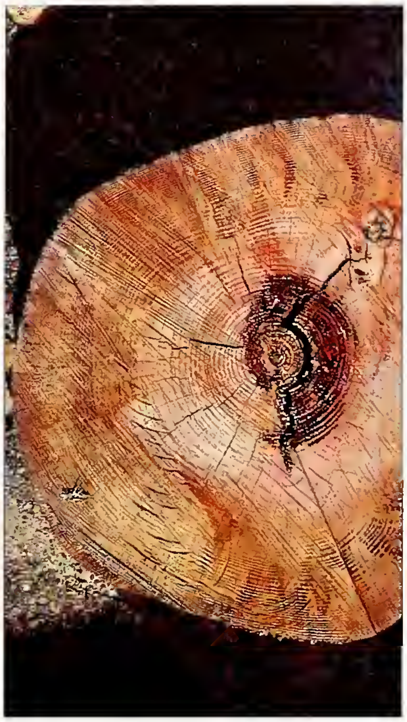
All federal agencies are mandated to do what is necessary to insure the survival of endangered species on lands they administer. The U.S. Forest Service and U.S. Army have responded to the needs of red-cockaded woodpeckers by increasing rotation age and controlling midstory intrusion. However, management programs have not been totally successful in halting the decline in abundance and additional management strategies are being developed. That is not to say that commercial use of timber resources on federal lands must be terminated. Proper timber management, which may include a variety of harvesting techniques, is compatible with maintenance of red-cockaded woodpeckers.

Managers of state- and privately-owned timber lands are under much more pressure to maximize the economic return from their timber resources than are managers of federal lands. Nonetheless, the federal Endangered Species Act specifically prohibits any act which actually kills or injures threatened or endangered wildlife. This includes habitat modification or degradation that significantly impairs essential behavior patterns, such as breeding and foraging. In the case of the red-cockaded woodpecker, the cavity trees and surrounding foraging habitat need to be protected.

If you know where a red-cockaded woodpecker colony can be found, please contact the Natural Heritage Program of the Louisiana Department of Wildlife and Fisheries. If you own land that supports red-cockadeds, the presence of this species should not greatly affect your forestry practices. Consultation with state or federal biologists should allow land management objectives to be met while insuring the long-term survival of this unique species. □

Nine-day-old nestling (left) is weighed after banding. Ft. Polk ecologist Steve Parris (top below) holds two chicks prior to returning them to nest. Pictured at bottom are clearly marked red-cockaded woodpecker tree on Ft. Polk and a cross section of a mature pine tree infected with red heart fungus.

Photos by Jerome Jackson



Photos by Robert Murry

Perfect...Purposeful...Plants

BY HERBERT J. BOURQUE

Almost unnoticed, the salty, high tide gradually creeps into the once-protected fresh marsh. Unaccustomed to the salty water, the plants of the area become weakened and later die. The lifeless roots slowly decompose losing their hold on the fragile organic soil, exposing it to erosion from waves and tides.

Over a short period of time, the vast area of plants, once full of life, is destroyed, leaving a less productive, open-water area in its place.

Such is the ebb and flow, the daily life and death cycle that happens all too frequently in many areas of the Louisiana marsh.

Plants are vital to the life of the Louisiana coastal marsh, a 3.2 million-acre area that contains some of the most productive wetlands in the world. And plants, Nature's "building blocks," have been a part of many effective coastal planning efforts in recent years.

During the early '50s, the USDA Soil Conservation Service (SCS) and local soil and water conservation districts began their initial work in the coastal marsh of Louisiana. "Back then, much of our work involved resource planning with landowners and operators interested in developing cattle grazing plans in the chenier marshes of southwest Louisiana," recalls Terry Clement, former SCS district conservationist

Herbert Bourque is a public **affairs specialist** with the **USDA Soil Conservation Service.**

in Cameron. "We also assisted various corporations and hunting clubs to improve their marsh areas for wildlife and other purposes."

This early work was the beginning of the marsh conservation planning process, a process that involved the marsh landowner and technical specialists from the SCS and districts. Conservation plans, the product of the planning process, outlined long-range ideas and practices that were needed for maximum use and protection of the marsh. The proper management of marsh plants was, and remains, the primary part of each plan.

Private corporations like The Louisiana Land and Exploration Company (LL&E), Fina LaTerre, Continental Land and Fur, Avery Island Inc., and the Vermilion Corporation saw an increased need for marsh conservation and conservation planning became a priority with many different marsh landowners.

"Because of the demand for conservation plans, we redirected resources and intensified our efforts with local conservation districts to meet the need," says Horace Austin, SCS state conservationist. "A large number of marsh conservation plans resulted, incorporating up-to-date practices and management techniques. Today over 700,000 acres of Louisiana coastal marsh are under some type of conservation plan."

In recent years, the Louisiana Department of Wildlife and Fisheries, Fur and Refuge Division, has worked cooperatively with the Soil Conservation Service and conservation districts to develop conservation plans on several thousand acres of state wildlife management areas. Water management alternatives and prospective site locations for vegetative plantings have been identified on the areas.

Another result of the intensified effort was an idea to develop a plant materials laboratory to evaluate various plants for marsh conservation work. The lab became a reality when The Louisiana Land and Exploration Company made available 11 acres of land, with buildings, near Golden Meadow.

The Louisiana Department of Natural Resources and the U.S. Environmental Protection Agency provided funding assistance for the project. The Soil Conservation Service provided manpower and technical leadership, while the Lafourche-Terrebonne Soil and Water Conservation District coordinated efforts at the local level.

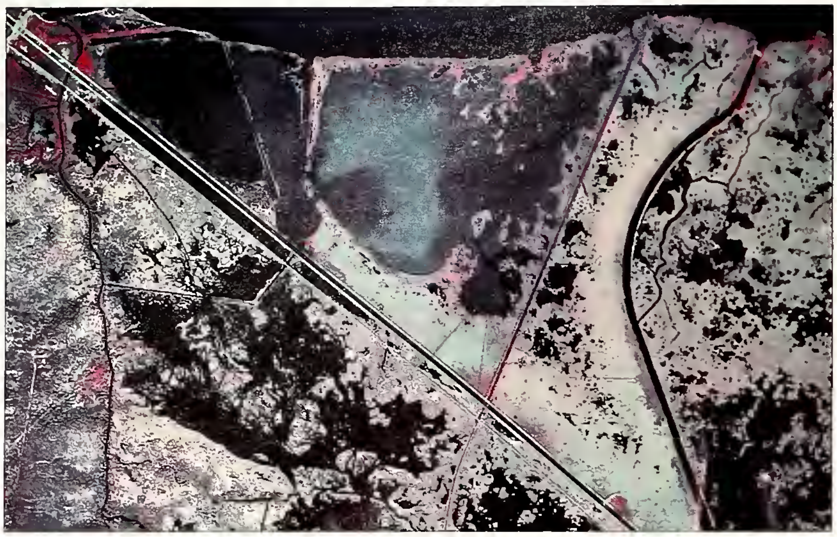
"Fifteen test ponds were constructed at the site," says Tommy Biles, manager of the facility. "We built seven on the organic soils (peat) and eight on the mineral soils of the area."

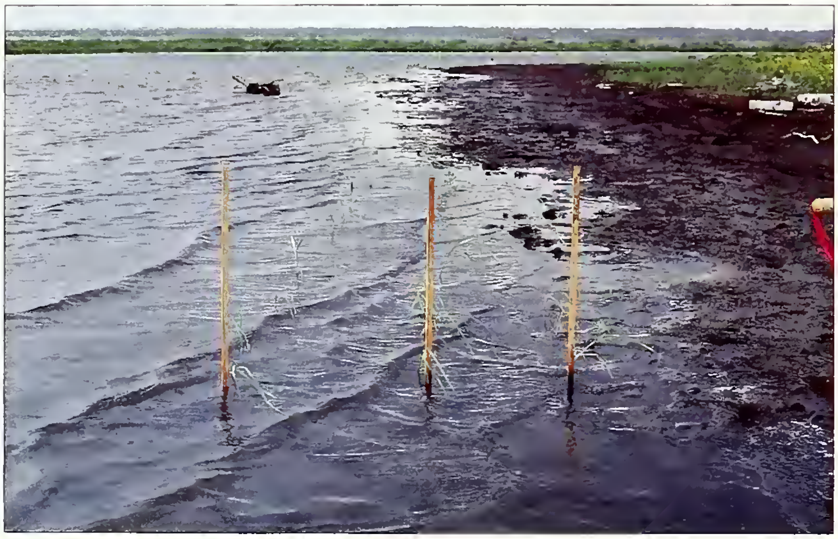
A total of 90 plant collections of smooth cordgrass, *Spartina alterniflora*, were obtained for evaluation at the lab. Collections were made from every coastal county or parish from Brownsville, Texas, to North Carolina. Fifty-one collections of giant cutgrass, *Zizaniopsis miliacea*, were obtained from Louisiana and Texas. "Each collection had enough plants to establish about six 20-foot rows," explained Biles.

"Smooth cordgrass was chosen for evaluation because it is extremely salt tolerant and prefers the intertidal area, the area of land between high and low tide," says Mike Materne, SCS Plant Materials Specialist. "Smooth cordgrass has a tremendous potential for stabilizing shorelines and lake banks against wave energies, tidal surges and boat traffic."

Laboratory cloning techniques established at the LSU Rice Research Station in Crowley may provide the key to producing the large number of plants needed to conserve the marsh through revegetation.

Tommy Biles, Plant Materials Center manager, evaluates giant cutgrass growing in one of the center's test ponds.





High altitude photo, top, is of the LaBranche Wetlands, a 12,000-acre area a few miles west of New Orleans along the shore of Lake Pontchartrain. Smooth cordgrass seedlings were planted there in the spring of 1984, center. There were no native stands of smooth cordgrass in or near the area. Bottom photo shows the same area 10 months later. The plants are taking hold and helping to create a buildup of organic material.

The giant cutgrass provides the same protective benefits as smooth cordgrass but is restricted to freshwater areas. Both species of plants are extremely aggressive and spread both vegetatively and by seed.

Another species being evaluated is gulf cordgrass (*Spartina spartinae*) which has a high tolerance to soil salts. "It has shown promise for stabilizing areas with high salt content as well as the sandy substrate of barrier islands," Materne said.

In 1988, an additional 52 acres of LL&E land were added to the lab and on October 1 of that year, the lab was reclassified as a USDA Plant Materials Center, one of 26 in the nation. It was officially dedicated on April 22 of this year. The new classification means the center will be funded annually to support plant development and associated activities — a guarantee that the coastal plant materials program will be a very stable one.

An impact has already been made by the plant materials effort. The center released a selected variety of smooth cordgrass in April and plans to release a variety of giant cutgrass later this calendar year, according to Materne. Greenhouse facilities provided by Louisiana State University in Baton Rouge, are being used to aid the selection process. The facilities, an extension of the center, furnish a year-round area for research and make the cooperative effort between LSU and SCS a very productive one. As a direct result of the plant materials program and the Plant Materials Center, several areas of Louisiana marsh have been protected from erosion.

In 1983, the Soil Conservation Service and the Gulf Coast Conservation District established about 13 miles of vegetation on the rapidly eroding eastern shoreline of Calcasieu Lake in Cameron Parish. The shoreline, which had been eroding at a rate of ten feet a year, was protected by the new plantings. The erosion rate was reduced substantially during the first two growing seasons alone.

In the Crescent Soil and Water Conservation District, St. Charles Parish, smooth cordgrass was planted on a badly eroded area of the LaBranche Wetlands in an attempt to stabilize some of the shorelines. By the end of the first growing season, the plants, which had been established about two feet apart, had grown rapidly and formed a continuous buffer against erosion.

Former Fur and Refuge Division chief, Louisiana Department of Wildlife and Fisheries, and current Crescent district supervisor Allan Ensminger says that the smooth cordgrass has spread even more. "In the two years following the plantings, hurricanes helped spread the plants to adjacent areas. Today, large areas of the LaBranche Wetlands are protected from erosion because of the aggressive nature and versatility of smooth cordgrass."

In 1988, a larger vegetative project developed involving the Soil Conservation Service; the Louisiana Department of Natural Resources, Geological Survey; the Louisiana Soil and Water Conservation Committee; four local conservation districts; and several coastal landowners. Six shoreline sites were selected to gain additional information on the planting techniques and planting feasibility. Over 17 miles of smooth cordgrass and 3,000 feet of giant cutgrass plantings were made at the sites. The plantings were made on a wide range of marsh and soil types. Again the results were very positive with successful plantings in many areas.

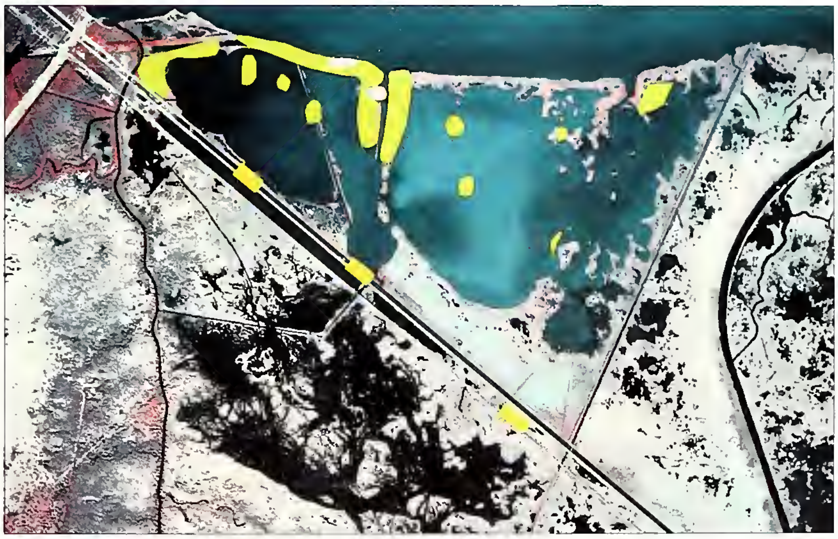
"We realize that shoreline protection is a small part of the total long-range goal of the plant materials effort," Austin mentions. "Our primary goals are to develop improved varieties of plants and techniques for plant production, as quickly as possible, to enhance the total marsh conservation program. "

A very new and exciting development in the plant materials program will help achieve that goal. The Soil Conservation Service has recently signed a cooperative agreement with the Louisiana State University Rice Research Station in Crowley. The agreement will provide an opportunity for cell biologists at the station to develop techniques for mass plant production through cell proliferation. Cloning techniques used in rice research (rice is an aquatic species of grass) are well established and offer an excellent opportunity to explore applications of biotechnology in coastal erosion control.

The loss of Louisiana's coastal wetlands is a very complicated, diverse problem, but one thing becomes increasingly clear. Plants need to be a vital part of every coastal enhancement or restoration effort. The importance of finding and developing the best plants possible for each particular need has to remain a high priority.

The new Golden Meadow Plant Materials Center and the intensive plant materials program will help find those perfect, purposeful plants. ☐

After only two growing seasons, top, the smooth cordgrass shows why it is considered one of the best plants for marsh revegetation. The colored areas in the high altitude photo below of the LaBranche Wetlands show where the smooth cordgrass has spread and colonized.



Species Profile

White-Tailed Deer

BY J. W. FARRAR

In the fall of the year outdoor enthusiasts often observe a unique occurrence. Small trees are seen with their bark rubbed off a foot or two above the ground. Spots of bare earth are also scraped out, usually under overhanging branches. The breeding season, or rut, of the white-tailed deer has begun.

It is the male, or buck, deer that creates these distinctive sign-posts or scent stations. His intentions are to notify the other bucks that the territory is his alone. In addition, the female, or doe, is attracted to the scrapes. When ready to mate, she leaves a scent message by which bucks can locate her. She remains receptive to mating, in estrus, for only about 36 hours. Does not successfully bred in their first estrus will have another one about four weeks later.

The major portion of the breeding season occurs in mid to late November in the upland pine-hardwood regions of the state and in late December through early January in the delta bottomland hardwood regions.

Seven months after mating, the fawns are born. For the majority, this is June in the uplands and late July-August in the deltas. At birth they weigh about four to five pounds each, males being the largest. They are chestnut brown in color and covered with rows of white spots. Adult females usually have two and the younger, yearling, females have only one. A good quality food supply, or lack of it, directly affects the number of fawns born and their mothers' ability to raise them.

The fawns are hidden by their mother, twins separately in most cases, and with their protective coloration, limited movements, and low scent level, are difficult to find by anyone or anything except the mother. She returns only every three to four hours to nurse and groom them, and as they grow older she may be away for longer periods. This characteristic has often led to the assumption that the fawn is abandoned. Such fawns, when taken by humans, are doomed from that point forward to an abnormal life in captivity, for they can not be successfully returned to the wild.

For the first two weeks of its life the fawn nurses regularly, but by the end of this period is also beginning to nibble at tender vegetation. At about three months of age fawns can live without milk although they may nurse much longer if the doe permits. The spots disappear at about four months of age as their hair is replaced by the gray-brown coat common to the other deer.

They grow rapidly and with good nutrition may weigh 50 to 60 pounds at six months of age, in the fall. In good habitat some female fawns will mature enough to breed late in the fall of the same year they are born.

The male fawn has no antlers in the first fall season, but as a yearling produces his first set the next fall. If he has received proper nutrition, he may produce a 6 or 8 point rack. The old cliche that the first antlers are always spikes is not true .

What happens to the bucks after breeding season each fall?

About three months after the breeding season they shed their antlers and become similar in appearance to the females. For months prior, these unique appendages received generous use in rubbing trees, fighting with other males, and as a badge of authority to insure social status within the herd. After shedding antlers, males spend the spring and summer in quiet seclusion. Regrowth of the antlers begins soon and is complete in the uplands by late August. During regrowth, a velvet-like skin filled with blood vessels covers and nurtures them. Hormonal changes, that have governed the whole process from its beginning, cause the velvet to shed off, leaving hardened bony antlers. Hormone levels continue to increase in the next three or four weeks to bring on the breeding instinct. This is usually earlier than comparable hormonal changes that trigger the breeding interest within the females. Then the cycle is repeated.

All this adds up to some productive deer herds in Louisiana, increasing 30 percent or more per year. It provides for the harvest of approximately 140,000 deer annually by sport hunters, with the beneficial results of balancing deer herds with available food supplies and keeping them healthy and productive. And it is a rare individual who doesn't appreciate just having them around.

Our deer herds are indeed a valuable natural resource.

J. W. Farrar is a game biologist and serves in the Game Division as the department's Deer Study Leader.

Make an Investment ...

Seldom does an investment opportunity arise like the state's current first-of-state Duck Stamp and Print Program. Not only is it an unprecedented opportunity to invest in the future of Louisiana's threatened wetlands and the waterfowl and other animals that depend so heavily on them, but it is also an excellent personal investment.

Such first-of-state stamps and prints are in demand among collectors and often rise rapidly in value, explained Dave Morrison, coordinator of the Duck Stamp Program for LDWF.

As examples, he cited the states of Iowa, Illinois, Michigan and South Carolina. Iowa's 1972 first-of-state stamp print now has an estimated replacement cost of $10,000. Illinois' 1975 first-of-state stamp print is now valued at $4,000. Michigan entered the duck stamp program in 1976 and its first-of-state stamp print in now valued at $1,800. South Carolina issued its first-of-state stamp print only eight years ago and already its value has risen to $1,600.

Morrison went on to say that collectors across the country have long awaited the issuance of a Louisiana stamp and print and that this anticipation should add substantially to the success of the Louisiana program. "In fact," he said, "three editions, the special Governor's Edition, the Artist Proof Edition and the Executive Edition, have already nearly sold out and the prints have just hit the market."

In addition to its investment potential, Morrison also pointed out that the monies generated by the program are dedicated to the acquisition of wetlands habitat for migratory waterfowl and couldn't come at a more opportune time. "Louisiana's wetlands are recognized as perhaps the most important habitat in the nation for wintering waterfowl. Duck numbers are down and any acquisition or enhancement of wetlands we can do here in Louisiana will be beneficial to waterfowl," he said.

Prices for the prints range from $149.50 to $979 depending on the edition and are available at art dealers throughout Louisiana and the United States. They can also be ordered through the mail.

STAMP/PRINT SPECIFICATIONS

Signed & Numbered Limited Edition
Set includes print and matching number mint stamps.

Medallion Edition
Set includes print, gold plated medallion and matching number mint stamps.

Executive Edition
Set includes print, gold plated medallion, color remarque and matching number mint stamps.

Artist Proof Edition
Set includes artist proof print, gold medallion, color remarque and matching number mint stamps.

Special Governor's Edition
Governor's Edition includes a signed and numbered print, gold plated medallion, color remarque, resident and non-resident mint stamps and two special Governor's Edition stamps with an outline of the state of Louisiana printed on the reverse side.

Louisiana art dealers handling the Louisiana first-of-state duck stamp print as of April 18 are:

Bastrop
Frames Et Cetera
Baton Rouge
Art for Art's Sake
Doran's Custom Framing
The Art Works
Trendsetter Galleries
U or Us Art Gallery
Bossier City
Collector's World
Chalmette
DAT Does It
Covington
Out of the Woods
Crowley
Bowsky's Inc.
Galliano
Jim's Photography
Greenwell Springs
Mats & Frames
Gretna
Frame City & Gallery
Hammond
Susan's General Store
Pipers Frame House & Art Gallery
Jena
Granny's Attic, Inc.
Lafayette
D Frames
Evangeline Galleries
Heritage Galleries
Lafayette U-Frame It
Stitch & Frame
Lake Charles
Frames Plus/McFillen Arts
Frames Unlimited
The Frame House & Gallery
Lockport
Judy's Art & Craft
Mandeville
The Framery
The Picture Framer
Metairie
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Monroe
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Timbermill Frame Shop
New Orleans
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Crabnet
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Your Frame Center
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Slidell
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1989 First of State Migratory Waterfowl Stamp

LOUISIANA

Cypress Island Blue Wings **David Noll**

1989 Louisiana Regular Edition w/Resident and Non-Resident stamp

Preserve your investment

Deluxe Framed as shown..........................$234.50

SPECIFICATIONS

Edition Size:

Signed & Numbered	20,500
Print w/Medallion	2500
Executive Edition w/Med w/RQC	550
Artist Proof set	550
Governor's Edition	330
Image Size	6 1/2" x 9"
Sheet Size	12" x 14"

RETAIL PRICE

Print w/Stamps	$149.50
Print w/Medallion w/Stamps*	$314.50
Exec. Ed. w/Med. w/RQC w/Stamps*	$464.50
Artist Proof Ed. w/Med. w/RQC w/Stamps*	$564.50
Governor's Ed. w/Med. w/RQC w/Stamps* w/Special Governor's Stamps*	$979.00
Poster	$10.00

** Include matching number resident mint stamp & non-resident mint stamp.*

*Call **1-800-223-3768** FOR DETAILS ABOUT GOVERNOR'S EDITION.*

The 1989 Louisiana Duck Stamp Print is available as a fine art poster
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Posters not available by mail, contact dealers directly.

Get your print directly from a dealer listed on the opposite page or by mail. To order by mail, send completed order blank to:

Louisiana Duck Stamp
P.O. Box 98000
Baton Rouge, LA 70898

Qty	Item Description	Deluxe Framed	Regular Framed	Unframed
_____	Signed & Numbered w/stamps	$234.50	$214.50	$149.50
_____	Medallion Edition w/stamps	414.50	399.50	314.50
_____	Executive Edition w/stamps	574.50	559.50	464.50
_____	Artist Proof Set w/stamps	674.50	659.59	564.50
_____	Governor's Edition w/stamps	1089.00	1074.00	979.00

Sub Total.. ____________
UPS Add $8.00 (Framed) $6.00 (Unframed) .... ____________
Total.. ____________

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If payment is made with credit card, please complete the following:

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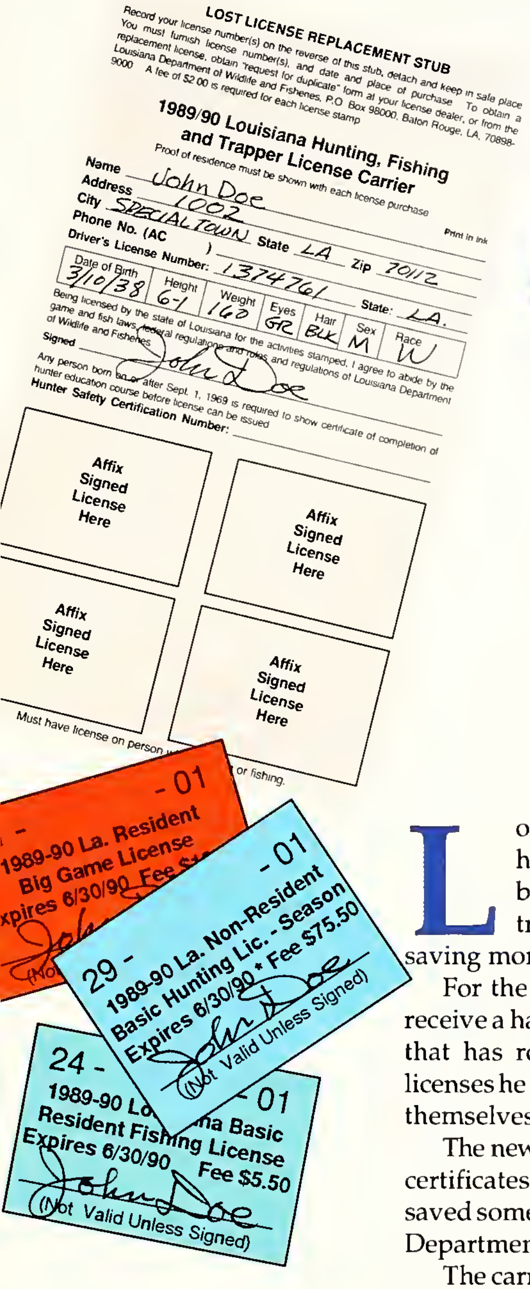


LOST LICENSE REPLACEMENT STUB

Record your license number(s) on the reverse of this stub, detach and keep in safe place. You must furnish license number(s), and date and place of purchase. To obtain a replacement license, obtain "request for duplicate" form at your license dealer, or from the Louisiana Department of Wildlife and Fisheries, P.O. Box 98000, Baton Rouge, LA. 70898-9000. A fee of $2.00 is required for each license stamp.

1989/90 Louisiana Hunting, Fishing and Trapper License Carrier

Proof of residence must be shown with each license purchase

Print in ink

Name John Doe
Address 1002
City SPECIALTOWN State LA Zip 70112
Phone No. (AC)
Driver's License Number: 1374761 State: LA.

Date of Birth	Height	Weight	Eyes	Hair	Sex	Race
3/10/38	6-1	160	GR	BLK	M	W

Being licensed by the state of Louisiana for the activities stamped, I agree to abide by the game and fish laws, federal regulations and rules and regulations of Louisiana Department of Wildlife and Fisheries

Signed John Doe

Any person born on or after Sept. 1, 1969 is required to show certificate of completion of hunter education course before license can be issued

Hunter Safety Certification Number:

Affix Signed License Here

Affix Signed License Here

Affix Signed License Here

Affix Signed License Here

Must have license on person … or fishing.

- 01
1989-90 La. Resident
Big Game License
Expires 6/30/90 Fee $1

29 - - 01
1989-90 La. Non-Resident
Basic Hunting Lic. - Season
Expires 6/30/90 * Fee $75.50
John Doe
(Not Valid Unless Signed)

24 - - 01
1989-90 Lo…na Basic
Resident Fishing License
Expires 6/30/90 Fee $5.50
John Doe
(Not Valid Unless Signed)

Attention Sportsmen:

New Licenses Are In Store

Louisiana's hundreds of thousands of hunters, fishermen and trappers who buy recreational licenses are in for a treat this year—and the state will be saving money to boot.

For the first time, each license buyer will receive a handy, wallet-sized "license carrier" that has room for any and all of the nine licenses he is entitled to purchase. The licenses themselves take the form of stick-on stamps.

The new system replaces the welter of paper certificates previously issued. It already has saved some $50,000 in production costs for the Department of Wildlife and Fisheries.

The carrier consists of a beige card containing a form for the licensee's identification data and marked with boxes for the various license stamps, all of which must be signed and affixed. The carrier, which can be folded in half or quarters, is of water-resistant stock designed to endure a year of use.

One innovation that outdoorsmen are sure to welcome is a lost-license replacement stub. It has room for recording all the license numbers issued. It is then detached and put away for use if the license carrier is lost or stolen.

The carrier will be dispensed free to the user. Other states that have a similar system charge a fee for their carrier. In Oklahoma, for instance, it costs $1.

Licenses available to Louisiana residents and nonresidents for the 1989-90 seasons include basic fishing, saltwater fishing, basic hunting, big-game hunting, bow hunting, muzzleloader hunting, trapping, state waterfowl and federal waterfowl.

The state and federal waterfowl licenses will be the traditional, artist-rendered Duck Stamps. Other licenses will be plain-printed stickers coded by color.

LDWF ordered 1,300,000 of the license carriers from the printer. It expects to issue 500,000 to 700,000 the first year; the disparity results from uncertainty as to how many hunters and fishermen will "double up" in their recreational activities.

Besides saving on printing costs, LDWF officials say the new licensing procedure will bring other economies.

Heretofore, considerable hand labor was involved in processing unsold license certificates returned by sheriff's offices. Now, with unsold licenses adhering neatly to a log sheet, an electronic scanner will be able to do the job.

The new license carriers are available to the sporting public, as well as to business establishments that intend to sell licenses, at the sheriff's offices of the 64 Louisiana parishes and at LDWF's Baton Rouge and New Orleans headquarters. ☐

LAW LINES

Behind the Badge

BY LT. KEITH LACAZE

Beefing Up Boating Safety Patrols: Here are three of the 10 new Boston Whaler Guardians purchased for use by the Enforcement Division of the Louisiana Department of Wildlife and Fisheries. The 18-foot craft come complete with 150-horsepower Yamaha motors plus trailers. They'll see duty throughout the state on boating safety and DWI patrols. With them are (from left) Wildlife Agents Wayne Vidos, Steve Rink, Jimmie Meaux and Ronald Morris.

The wildlife agent is alone in his mobile unit. It's 1 a.m. and he has been watching the field for three hours. He is the only officer on duty in his district tonight. A tip on night hunting of deer has brought him to this place at this time.

The lights of an approaching vehicle illuminate the road beyond his concealed unit. As the vehicle comes adjacent to the wheat field, a light appears from the passenger window and slashes the darkness.

The vehicle continues to move slowly down the road, and the spotlight is worked over the area in a thorough manner—the technique of an experienced poacher.

As the vehicle passes his position, the agent is able to determine that it is a pickup truck and is occupied by three subjects. Some assistance may be in order, so he picks up the microphone of his 39.5 "sheriff's radio" and calls for the deputy on duty in this zone.

The deputy responds, information is exchanged, and the deputy advises that he is en route to assist. A state trooper who has monitored the conversation advises that he is nearby and will assist as well.

Within minutes the other officers arrive. The "stop" is made, and the agent finds a loaded rifle and shotgun in the truck and makes his arrest. The deputy and trooper keep an eye on the poachers and assist the wildlife agent in the business of seizing firearms and gathering information.

This is a common occurrence and a prime example of the interagency cooperation that is necessary for effective law enforcement. It is especially important to the wildlife agent who often finds himself alone in a potentially dangerous set of circumstances.

In turn, the Enforcement Division of the Department of Wildlife and Fisheries often assists the State Police and Sheriff's Departments by providing specialized equipment and officers in searches, manhunts or times of disaster.

A four-wheel-drive vehicle or boat and motor, standard equipment for an agent, are invaluable at these times. Also, the agent who is familiar with a remote area can provide valuable information to another agency's officers.

The State Police and Sheriff's Departments are by no means the only law-enforcement agencies with which the Enforcement Division interacts.

The wildlife agent and the U.S. Forest Service enforcement officer often patrol the same territory. They routinely work together on littering and vandalism on Forest Service land. Last January, Forest Service and Wildlife and Fisheries agents teamed up to combat a night hunting problem in the Evangeline Ranger District in central Louisiana. They were successful in making arrests in two separate cases.

The special agent of the U.S. Fish and Wildlife Service and the state wildlife agent both enforce federal regulations on migratory waterfowl. Throughout waterfowl season they can be found together checking hunters and looking out for bait.

Resources are pooled and officers from both agencies benefit from shared knowledge and experiences. Cooperative efforts between these two agencies have resulted in high-quality law enforcement at a time when waterfowl populations most need protection.

Everyone in law enforcement believes that all officers are working for a common good. The spirit of cooperation has long existed among the various agencies. The wildlife enforcement agent knows he can rely on fellow officers when assistance is required. At the same time the agent is always willing to step forward and provide professional, trained assistance when the need arises.

For Muzzleloaders Only

Louisiana hunters who enjoy the use of muzzleloaders, also known as black-powder or primitive firearms, can look forward to a special muzzleloader-only deer season in the fall.

The Wildlife and Fisheries Commission approved the special season along with a new $10.50 muzzleloader license which, like the current archery license, will be required in addition to a basic hunting license and a big-game license.

Although muzzleloaders previously were allowed for deer hunting, muzzleloader-only hunting was restricted to two-day periods on specified Wildlife Management Areas.

The new statewide muzzleloader-only season is expected to be five to seven days long. Season dates and either-sex hunting days are now being arranged.

Conservation Notes

Fish Feel Economy Ax

In a cost-saving move, the Louisiana Department of Wildlife and Fisheries has announced that it will discontinue stocking privately owned ponds with gamefish.

Officials of LDWF's Freshwater Fisheries Division said existing commitments to stock private ponds with bass will be honored until July 1. They said that along with last fall's stocking of bluegills, some 595 private ponds will have been serviced by the end of the current fiscal year.

After July 1, it was noted, landowners will still be able to restock their ponds by buying gamefish fingerlings from private dealers.

LDWF will continue to stock the state's public lakes, concentrating in the future on Florida bass. Devoting the stocking program exclusively to public lakes will enable the department to share in federal matching funds, according to Arthur Williams, LDWF's Dingell-Johnson aid coordinator.

Wildlife Educator Cited

The Louisiana Forestry Association has presented an outstanding tree farmer award to Bob Johnson, education coordinator for the Department of Wildlife and Fisheries. Owner of a tract near his home in Glenmora, Rapides Parish, Johnson manages the land for timber production while maintaining its utility as a wildlife habitat.

State Gets Federal Cash

The U.S. Fish and Wildlife Service is dividing up a record $298.5 million collected in fiscal 1989 in the form of federal excise taxes on hunting, fishing and boating equipment.

Louisiana's share for sportfish restoration under the Dingell-Johnson Act is $2,844,181.

The state will get an additional $2,238,910 for wildlife restoration and hunter education under the Pittman-Robertson Act.

Tarpon Club Active

Members and guests of the Louisiana Tarpon Club caught 185 tarpon last year—and released 124 of them, reports club secretary Bill Scheffler of Gretna.

The largest fish of the year, weighing 191 pounds 4 ounces, was caught by Joe Roberts. Ten-year-old Genny Bertucci hooked one weighing 129 pounds 12 ounces and hung on 4 1/2 hours before it was boated.

The club has more than 100 members. For information, call Scheffler at 504/392-2515.

Free Fishing Days

Louisiana will join the nation in celebrating National Fishing Week June 5-11 and will highlight the observance by offering two Free Recreational Fishing Days.

In authorizing the event, the Louisiana Wildlife and Fisheries Commission noted that the state's 800,000-plus sport fishermen contribute a billion dollars a year to the economy while engaging in a wholesome and pleasurable activity.

The commission acted to lure even more people into the pastime by declaring the free fishing days for Saturday and Sunday, June 10-11.

On those two days, residents of Louisiana and nonresidents as well are invited to exercise the privileges of a licensed recreational fisherman without having to buy a license. All other fishing regulations will, of course, prevail.

In addition, education coordinators of the Louisiana Department of Wildlife and Fisheries will conduct free fishing clinics for children across the state. Interested parents may obtain details of the clinic closest to home by calling any of LDWF's eight district offices.

Clark Heads Fisheries

Dr. Jerry E. Clark has assumed his duties as the first-ever assistant secretary to head the new Office of Fisheries in the Louisiana Department of Wildlife and Fisheries.

The Office of Fisheries, created when LDWF's fishery activities were restructured by the Legislature last year, comprises the Marine Fisheries Division and the Freshwater Fisheries Division.

Clark previously was chief of coastal fisheries for the Texas Parks and Wildlife Department.

Joining LDWF Secretary Virginia Van Sickle in announcing Clark's appointment, Gov. Buddy Roemer commented: "I am happy that Dr. Clark has accepted this position. His credentials are a perfect match for the fisheries management challenges that face the state of Louisiana today."

Asked about the job ahead of him, Clark said: "It is important to improve fisheries management in Louisiana because good management means economic growth. And that translates into citizen satisfaction with the state, new jobs and ultimately tax dollars."

In Texas, Clark co-authored that state's first Shrimp and Oyster Management Plans. Those and a Red Drum Plan are now in the adoption phase, and five other fishery plans are being prepared. He served on the Gulf of Mexico Fishery Management Council.

As chief of Texas' coastal fisheries, Clark managed a budget of nearly $4 million. Under his supervision a staff of 101 permanent employees annually prepared more than 30 scientific publications, took 10,000 resource samples and completed 10,000 creel interviews.

Clark has published results from his work in scientific journals in several areas of fisheries, including the economics of oysters and the population dynamics of marine finfish.

He holds a Doctor of Philosophy degree in fishery economics from Oregon State University and has taught at the university level.

It's Hank Jr. Again

Hank Williams Jr., country music entertainer and ardent outdoorsman, will serve for the second time as honorary chairman of National Hunting and Fishing Day. The 1989 observance is set for Saturday, Sept. 23.

LWF Bestows Honors

Nancy Jo Craig of Baton Rouge, executive director of the Louisiana Nature Conservancy, has received the Governor's Award as 1988 Conservationist of the Year for her work in behalf of wildlife habitat preservation.

The award was presented at the 50th anniversary meeting of the Louisiana Wildlife Federation in Bossier City in February. The presentation marked the 25th annual Governor's Awards Program for Conservation Achievement, adminstered by LWF and sponsored by Sears, Roebuck & Co.

Five other individuals, an organization and a corporation also were honored. They were:

Professional Conservationist of the Year—John C. Glenn, Baton Rouge, outdoor recreation planner with the Office of State Parks, for wetlands conservation.

Volunteer Conservationist of the Year—David W. Boudreaux, Crowley, for waterfowl conservation efforts.

Conservation Educator of the Year—Rob Broussard, Shreveport, sponsor of the Greenacres Junior High Wildlife Club, for excellence in conservation education.

Legislative Conservationist of the Year—Sen. Ben J. Bagert Jr., New Orleans, for legislative initiatives to protect the environment and coastal and marine resources.

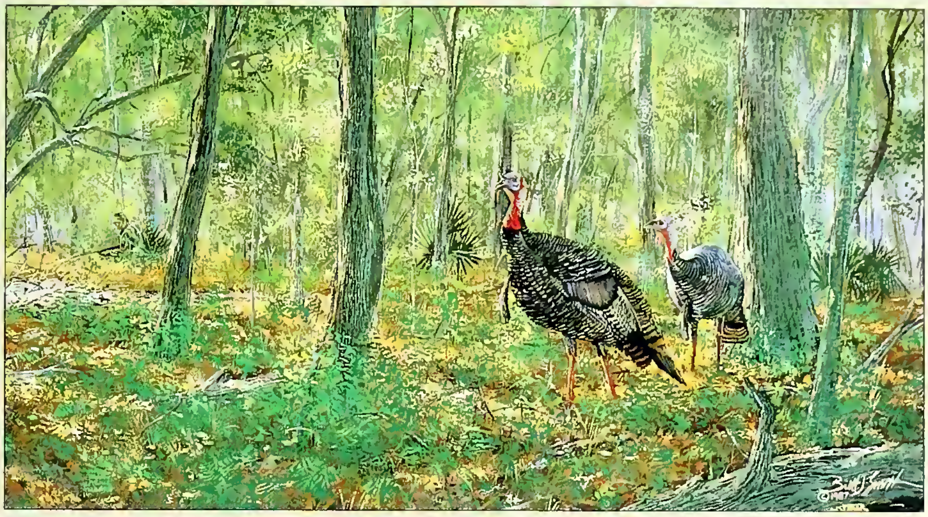
Conservation Communicator of the Year—David L. Hall, Slidell, special agent with the U.S. Fish and Wildlife Service, for video presentations promoting resource conservation and outdoor ethics.

Conservation Organization of the Year—Women for a Better Louisiana, for its anti-litter campaign and daily involvement in environmental quality efforts.

Conservation Corporation of the Year—Conoco, Inc., New Orleans Division, for its campaign to clean up and reduce marine debris.

In connection with the LWF meeting, the Louisiana Outdoor Writers Association presented its Arthur Van Pelt Award to the family of the late Gerry Waguespack of New Orleans. The award commemorates a lifetime of conservation achievement.

Waguespack, 61, died in January. Noted for his fight to save redfish and speckled trout and for his years of service as an officer of LWF, he had twice been named Nonprofessional Conservationist of the Year under the Governor's Awards Program.



Gobbler Print Offered: "Tom Foolery—Wild Turkeys," a depiction of gobblers in their native habitat by Louisiana artist Brett Smith, is available as a conservation stamp/print from the Louisiana Wildlife Federation. The signed print, limited to an edition of 1,200, is priced at $78, and framing is offered at extra cost. LWF's address is P.O. Box 16089 LSU, Baton Rouge, LA 70893, and the phone number is 504/344-6707.

New Wetlands Refuge

Lake Ophelia National Wildlife Refuge, a planned 30,000-acre expanse of bottomland hardwood backwater swamp 30 miles southeast of Alexandria, has been dedicated as the 448th unit of the National Wildlife Refuge System.

Home to many species of wildlife, the area will provide wintering habitat for an anticipated 100,000 mallard and pintail ducks.

At the dedication in February, Frank Dunkle, then director of the U.S. Fish and Wildlife Service, told assembled dignitaries: "We want to thank the Louisiana congressional delegation, the Nature Conservancy, and all the groups and individuals who have worked so hard in recent months to make this refuge a reality."

Rabies a Danger to All

Rabies is a viral disease that is fatal to all warm-blooded animals, including man, cautions Dr. Laura B. McElroy, Baker veterinarian. She points out that transmission is usually by a bite or scratch from an infected animal, and hunting dogs are especially at risk.

Last year, Dr. McElroy notes, 13 cases of rabies were diagnosed in Louisiana. They involved 11 skunks, one bat and a cat.

State law requires that all cats and dogs be vaccinated against rabies. May 7-13 is Rabies Awareness Week, and many members of the Louisiana Veterinary Medical Association are offering to help spread the message by appearing as speakers at school and civic gatherings.

Moving?

Please print your new address below. Send this form and the label on this cover to the address below, allowing six weeks for the change.

Name ____________________

Address ____________________

City ____________________

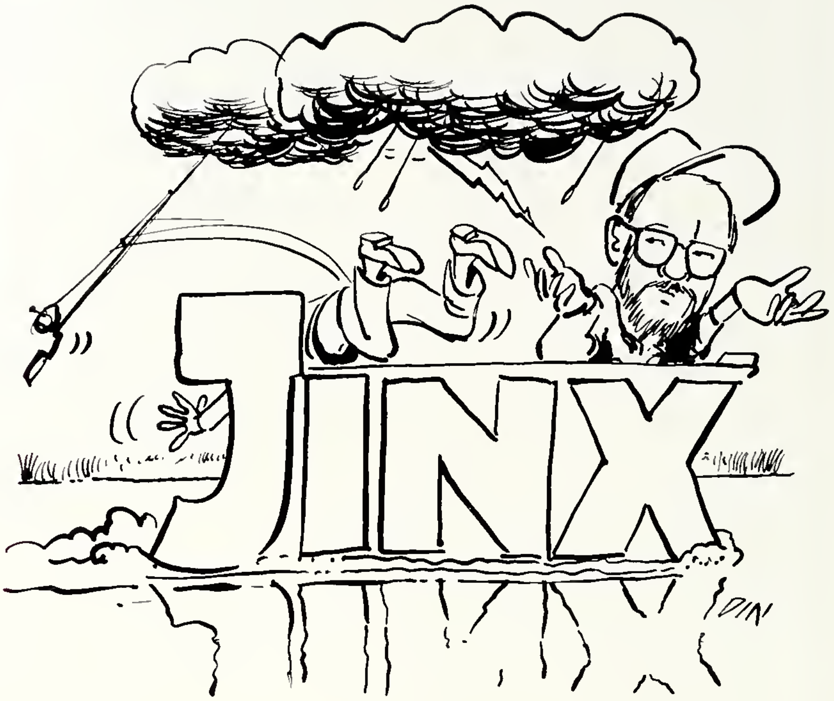
State ____________________ **Zip** ____________________

Louisiana Conservationist
P.O Box 98000
Baton Rouge, LA 70898-9000

Luck Changes, But Jinx Is for Life

FUNNY SIDE UP

BY GLYNN HARRIS



Billy Bob doesn't ask me to fish with him anymore. Oh, he's polite and tactful about it. He doesn't scoff and make public sport of me when I suggest we plan a mutually enjoyable outing on the lake.

No, he coughs nervously and says something like, "I'd like to — really, I would — but the little woman has been after me for weeks to paint the shutters. You know how those women can be...."

That's what he says. What he means is, "Harris, you twit, the last time I let you talk me into going fishing with you, my lower unit cracked, I lost my favorite fishing rod in the lake, it came a storm, and we didn't get a bite. You're a jinx, Harris, and quite frankly, I'd rather mud wrestle a boa constrictor than get back in a boat with you."

Then there's Junior. He finally relented and took me to his favorite lake where he had located acres of huge bluegills. You had to hunker way down in the boat to bait your hook or else they'd try to climb aboard. I finally surmised that he took me along only because my falling at his feet, clinging to his ankles and whimpering while slobbering on his Sunday shoes was beginning to wear a little thin with him.

Two days before Junior and I went, he brought home a cooler full of bull bream he caught in no more than a couple of hours. Now, you can call it coincidence or you can call it fate. I think it's the jinx working again because it was on the precise day we went that the bluegills decided they had had enough of romping in the shallows making baby bluegills and wolfing down crickets. They disappeared and nobody has caught any since. I hear disturbing rumors that the lake commission is considering passing an ordinance banning me from fishing the lake.

Even today as I drive up the launching ramp, I hear murmuring as anglers gather in small groups, glowering at me. Then, I'll see a finger thrust my way and hear sharp words spat in my direction, "Yeah, that's him allright.....that's the guy that killed our bream fishing."

They give me a wide berth as I launch my boat, hurling slurs and shaking their fists as I motor away toward the breamless bream beds.

Bubba is my latest victim. Last week, he invited me on a night fishing trip to his favorite lake. (He hasn't talked with Billy Bob or Junior lately, I gathered.) We left town in a thunderstorm, but by the time we arrived at the lake, the rains had ceased and the wind was calm.

"Ah-h," I thought, "this is going to be great. No jinx this time." We motored up to our first fishing hole and on my very first cast, I tied into a scrappy two pound bass. "First cast! Hot dog...we'll tear'em up tonight," I chortled.

However, Bubba's enthusiasm lacked a lot matching mine. Truth to tell, he looked downcast as he muttered, "Don't you know it's bad luck to catch a fish on your first cast? It's a jinx."

There was that dreaded word....."JINX." The word was no sooner out of his mouth when a stiff east wind came up out of nowhere, blowing us away from our fishing hole. What followed is not a pretty picture. A full-fledged storm bore down on us but before it hit, I turned to make one last cast. As I pivoted in the seat, I caught my toe under Bubba's brand new rod and reel and deftly flipped it into the lake. Fortunately, we retrieved it. Then, a sudden gastric attack hit Bubba without warning, causing him to start searching frantically, eyes bulging, teeth clenched, for a wooded area to beach the boat. We gave up, trailered the boat and headed home.

But.....this is another day! Anybody want to go fishing with me?

I didn't think so..... □

Bayou Kitchen

by *Wayne Miller*

Photo by Ken Glaser

Ginger Cream Sauce

Although we suggest serving this unusual sauce over grilled lemon fish, it goes well with almost any kind of fish grilled, poached or panfried.

2 tblsps. butter, room temperature
1/4 cup thinly sliced onion
1/4 cup thinly sliced peeled ginger
1/2 cup dry white wine
1/2 cup fish stock
1 cup whipping cream
1/4 cup light soy sauce
1 tblsp. all purpose flour
Salt and freshly ground white pepper

Melt 1 tblsp. butter in heavy medium saucepan over medium heat. Add sliced onion and ginger and stir 2 minutes. Add wine and boil until reduced to glaze. Stir in stock and boil until reduced by half. Add cream and soy sauce and simmer 1 minute. Cool sauce completely. Cover and refrigerate overnight.

Next day bring sauce to simmer. Mash remaining 1 tblsp. butter with flour until smooth. Whisk enough of flour mixture into sauce to thicken lightly. Strain and season with salt and pepper. Serve immediately. Serves 4.

Vegetables With Orange Peel, Herbs and Wine

2 1/2 lbs. eggplant, cut into 1-inch squares
Salt
7 ounces lean salt pork, cut into 1/4-inch thick slices and chopped
2 tblsps. olive oil
4 medium carrots, peeled and cut into 1/3-inch thick rounds
2 medium celery stalks, cut into 1/4-inch dice
1 large onion, cut into 1/2-inch dice
4 bay leaves
3 tblsps. minced Italian parsley
3 large garlic cloves, thinly sliced
1 tblsp. grated orange peel
1 fresh thyme sprig or 1/8 tsp. dried, crumbled
1/4 tsp. marjoram, dried, crumbled
1/4 tsp. savory, dried, crumbled
1 sage leaf
Pinch of ground cloves
2/3 cup dry white wine
1 lb. can Italian plum tomatoes, undrained, crushed
2 tblsps. tomato paste
1 cup chicken or meat stock
Freshly ground pepper

Arrange eggplant on triple layer of paper towels. Sprinkle generously with salt. Top with triple layer of towels and weight with heavy cutting board; top with heavy cans. Let stand 5 hours.

Preheat oven to 350 F. Blanch salt pork in small saucepan of boiling water 5 minutes. Drain, rinse with cold water and drain; pat dry. Heat oil in heavy large skillet over medium heat. Add salt pork and cook until beginning to brown, stirring frequently, about 8 minutes. Reduce heat to medium-low. Add carrots, celery, onion, bay leaves and parsley. Cook until vegetables are golden brown, stirring frequently, about 15 minutes. Pat eggplant dry. Add to pan. Increase heat to medium-high and cook until eggplant begins to soften, stirring frequently, about 4 minutes. Add garlic, orange peel, herbs and cloves and stir 30 seconds. Add wine and boil until absorbed, about 3 minutes. Mix in tomatoes and tomato paste and simmer 1 minute.

Transfer mixture to large Dutch oven. Add stock and bring to boil. Cover and bake 40 minutes. Uncover and continue cooking until sauce thickens, about 25 minutes. Season with pepper. Serve hot or warm. Serves 6.